

Consult your local Korg dealer for more information on MIDI System Exclusive implementation.

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

[H] :Hex, [D] :Decimal

Status	Second	Third	Description (Transmitted by)	ENA
[Hex]	[H] [D]	[H] [D]		
8n	kk (kk)	40 (64)	Note Off (Key Off)	*1 A
9n	kk (kk)	vv (vv)	Note On (vv)=1-127 (Key On)	*1 A
An	kk (kk)	vv (vv)	Poly Key Pressure (Seq.data)	T,Q
Bn	00 (00)	mm (mm)	Bank Select(MSB) (BANK keys, Prog/Combi change)	*2 PB
Bn	01 (01)	vv (vv)	Modulation1 (Joy Stick +Y)	C
Bn	02 (02)	vv (vv)	Modulation2 (Joy Stick -Y)	C
Bn	04 (04)	vv (vv)	Foot Pedal (A.Pdl = Foot Pedal)	C
Bn	05 (05)	vv (vv)	Portamento Time (A.Pdl/Knob-B = Porta.Time, S Chg)	C
Bn	06 (06)	vv (vv)	Data Entry (MSB) (ARP ON/OFF, GATE, VELOCITY)	*3 C
Bn	07 (07)	vv (vv)	Volume (A.Pdl/Knob-B = Volume, S/C Chg)	C
Bn	08 (08)	vv (vv)	Post IFX Panpot (A.Pdl/Knob-B = PostIFXPan, S Chg)	C
Bn	0A (10)	vv (vv)	Panpot (A.Pdl/Knob-B = Pan, S Chg)	C
Bn	0B (11)	vv (vv)	Expression (A.Pdl/Knob-B = Expression)	C
Bn	0C (12)	vv (vv)	Effect Control 1 (A.Pdl/Knob-B = FX Control1)	C
Bn	0D (13)	vv (vv)	Effect Control 2 (A.Pdl/Knob-B = FX Control2)	C
Bn	10 (16)	vv (vv)	Multi Purpose Ctrl1 (Ribbon Controller)	C
Bn	11 (17)	vv (vv)	Multi Purpose Ctrl2 (Knob-B = Knob Mod1)	C
Bn	12 (18)	vv (vv)	Multi Purpose Ctrl3 (Value Slider)	C
Bn	13 (19)	vv (vv)	Multi Purpose Ctrl4 (Knob-B = Knob Mod2)	C
Bn	14 (20)	vv (vv)	(Knob-B = Knob Mod3)	C
Bn	15 (21)	vv (vv)	(Knob-B = Knob Mod4)	C
Bn	20 (32)	bb (bb)	Bank Select(LSB) (BANK keys, Prog/Combi change)	*2 PB
Bn	40 (64)	vv (vv)	Hold1 (Damper)	C
Bn	41 (65)	00/7F (00/127)	Portamento Off/On (SW1/SW2/A.SW = Porta.SW, S Chg)	C
Bn	42 (66)	00/7F (00/127)	Sostenuto Off/On (A.SW = Sostenuto)	C
Bn	43 (67)	vv (vv)	Soft Pedal (A.SW = Soft)	C
Bn	46 (70)	vv (vv)	Sound Controller 1 (Knob-B = F/A Sustain)	C
Bn	47 (71)	vv (vv)	Sound Controller 2 (Knob-2A, Knob-B = Resonance/HPF)	C
Bn	48 (72)	vv (vv)	Sound Controller 3 (Knob-4A, Knob-B = F/A Release)	C
Bn	49 (73)	vv (vv)	Sound Controller 4 (Knob-B = F/A Attack)	C
Bn	4A (74)	vv (vv)	Sound Controller 5 (Knob-1A, Knob-B = LPF Cutoff)	C
Bn	4B (75)	vv (vv)	Sound Controller 6 (Knob-B = F/A Decay)	C
Bn	4C (76)	vv (vv)	Sound Controller 7 (Knob-B = Pitch LFO1 Spd)	C
Bn	4D (77)	vv (vv)	Sound Controller 8 (Knob-B = Pitch LFO1 Dep)	C
Bn	4E (78)	vv (vv)	Sound Controller 9 (Knob-B = Pitch LFO1 Dly)	C
Bn	4F (79)	vv (vv)	Sound Controller 10 (Knob-3A, Knob-B = Filter EG Int)	C
Bn	50 (80)	00/7F (00/127)	Multi Purpose Ctrl5 (SW1/Knob-B = SW1 Mod.)	C
Bn	51 (81)	00/7F (00/127)	Multi Purpose Ctrl6 (SW2/Knob-B = SW2 Mod.)	C
Bn	52 (82)	00/7F (00/127)	Multi Purpose Ctrl7 (A.SW/Knob-B = Foot SW)	C
Bn	53 (83)	vv (vv)	Multi Purpose Ctrl8 (Knob-B = CC#83)	C
Bn	5B (91)	vv (vv)	Effect 1 Depth (A.Pdl/Knob-B = MFX Send2, S Chg)	C
Bg	5C (92)	00/7F (00/127)	Effect 2 Depth (All Insert FX Off/On)	C
Bn	5D (93)	vv (vv)	Effect 3 Depth (A.Pdl/Knob-B = MFX Send1, S Chg)	C
Bg	5E (94)	00/7F (00/127)	Effect 4 Depth (Master FX1 Off/On)	C
Bg	5F (95)	00/7F (00/127)	Effect 5 Depth (Master FX2 Off/On)	C
Bn	cc (cc)	vv (vv)	Control (cc)=0-95 (Knob-B = MIDI CC#00-95)	C
Bn	62 (98)	ss (ss)	NRPN Param No.(LSB) (ARP ON/OFF, GATE, VELOCITY)	*3 C
Bn	63 (99)	tt (tt)	NRPN Param No.(MSB) (ARP ON/OFF, GATE, VELOCITY)	*3 C
Bn	cc (cc)	vv (vv)	Control (cc)=0-101 (Seq. data)	Q
Cn	pp (pp)	-- --	Program Change (Prog/Combi change)	*2 P
Dn	vv (vv)	-- --	Channel Pressure (After Touch)	T
En	bb (bb)	bb (bb)	Bender Change (Joy Stick X	C

A.Pdl : Assignable Pedal

A.SW : Assignable Switch

S Chg : Transmitted when change a Song No.(Seq. mode). (Track's Status = EXT,EX2,BTH)

C/S Chg : Transmitted when change a Combination or Song No.(Seq. mode). (Track's Status = EXT,EX2,BTH)

n : MIDI Channel No. (0 - 15) Usually Global Channel.

When in Combination/Sequencer/Song Play mode, each timbre's/track's channel.(Status = EXT,EX2 or BTH)

g : Always Global Channel No. (0 - 15)

ENA = A : Always Enabled

C : Enabled when Enable Control Change in Global mode is checked

P : Enabled when Enable Program Change in Global mode is checked

PB: Enabled when Enable Program and Bank Change in Global mode is checked

T : Enabled when Enable After Touch in Global mode is checked

Q : Enabled when Sequencer is playing(transmit), recording(receive)

*1 : kk = 24 - 108 : TRITON STUDIO 61 (61keys + Transpose)
 = 16 - 115 : TRITON STUDIO 76 (76keys + Transpose)
 = 09 - 120 : TRITON STUDIO 88 (88keys + Transpose)
 = 00 - 127 : Sequencer and Arpeggiator

*2 : Program Combination MIDI Out[Hex] (Bank Map is KORG) (Bank Map is GM(2))

BankINT-A 0 - 127	: BankINT-A 000 - 127	: mm,bb,pp	= 00,00,	00 - 7F	= 3F,00,	00 - 7F
INT-B 0 - 127	: INT-B 000 - 127	:	00,01,	00 - 7F	3F,01,	00 - 7F
INT-C 0 - 127	: INT-C 000 - 127	:	00,02,	00 - 7F	3F,02,	00 - 7F
INT-D 0 - 127	: INT-D 000 - 127	:	00,03,	00 - 7F	3F,03,	00 - 7F
INT-E 0 - 127	: INT-E 000 - 127	:	00,04,	00 - 7F	3F,04,	00 - 7F
INT-F 0 - 127	:	:	00,05,	00 - 7F	3F,05,	00 - 7F
G 1 - 128	:	:	79,00,	00 - 7F	79,00,	00 - 7F
g(1)-(9) 1 - 128	:	:	79,01-09,	00 - 7F	79,01-09,	00 - 7F
g(d) 1 - 128	:	:	78,00,	00 - 7F	78,00,	00 - 7F
EXB-A 0 - 127	: BankEXB-A 000 - 127	:	00,08,	00 - 7F	3F,08,	00 - 7F
EXB-B 0 - 127	: EXB-B 000 - 127	:	00,09,	00 - 7F	3F,09,	00 - 7F
EXB-C 0 - 127	: EXB-C 000 - 127	:	00,0A,	00 - 7F	3F,0A,	00 - 7F
EXB-D 0 - 127	: EXB-D 000 - 127	:	00,0B,	00 - 7F	3F,0B,	00 - 7F
EXB-E 0 - 127	: EXB-E 000 - 127	:	00,0C,	00 - 7F	3F,0C,	00 - 7F
EXB-F 0 - 127	: EXB-F 000 - 127	:	00,0D,	00 - 7F	3F,0D,	00 - 7F
EXB-G 0 - 127	: EXB-G 000 - 127	:	00,0E,	00 - 7F	3F,0E,	00 - 7F

*3 : ARPEGGIATOR ON/OFF :[Bn,63,00,Bn,62,02,Bn,06,mm] mm = 00(Off),7F(On)
 ARPEGGIATOR GATE Knob :[Bn,63,00,Bn,62,0A,Bn,06,mm] mm = 00-7F
 ARPEGGIATOR VELOCITY Knob :[Bn,63,00,Bn,62,0B,Bn,06,mm] mm = 00-7F

When in Program/Combination mode, Global channel.

When in Sequencer/Song Play mode, Control Track's channel.

1-2 SYSTEM COMMON MESSAGES

[H] :Hex, [D] :Decimal

Status	Second	Third	Description (Transmitted when)
[Hex]	[H] [D]	[H] [D]	
F2	ss (ss)	tt (tt)	Song Position Pointer
			ss : Least significant [LSB] *4
			tt : Most significant [MSB] *4
F3	ss (ss)		Song Select (Song or Cue List is selected)
			ss : Song(0-127)/Cue List(0-19) No.

Transmits Song Position Pointer message when in Sequencer and Song Play mode (Internal Clock)

Transmits Song Select message when in Sequencer mode (Internal Clock)

*4 : For example, if time signature is 4/4 or 8/8, tt,ss = 00,10 means one measure.

1-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Transmitted when ...)
F8	Timing Clock (Always in Prog/Combi/Seq/Song Play mode)*
FA	Start (START in Seq/Song Play mode) *
FB	Continue (Continue START in Seq/Song Play mode) *
FC	Stop (STOP in Seq/Song Play mode) *
FE	Active Sensing (Always)

* : Transmits these message when MIDI Clock in Global mode is Internal.

1-4 SYSTEM EXCLUSIVE

1-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

DEVICE INQUIRY REPLY (Transmits when received a INQUIRY MESSAGE REQUEST)

[F0,7E,0g,06,02,42,50,00,mm,00,nn,00,vv,00,F7] 3rd byte g : Global Channel
 6th byte 42 : KORG ID
 7th byte 50 : TRITON series ID
 9th byte mm : TRITON STUDIO 61 mm = 25
 TRITON STUDIO 76 mm = 2E
 TRITON STUDIO 88 mm = 37
 11th byte nn : System No. (01 -)
 13th byte vv : System Version (01 -)

1-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

Master Volume

[F0,7F,0g,04,01,vv,mm,F7] 3rd byte g : Global Channel
 6th byte vv : Value(LSB)
 7th byte mm : Value(MSB)
 mm,vv = 00,00 - 7F,7F : Min - Max

2.RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

[H] :Hex, [D] :Decimal

Status	Second	Third		Description (Use)	ENA
[Hex]	[H] [D]	[H]	[D]		
8n	kk (kk)	xx	(xx)	Note Off	A
9n	kk (kk)	00	(00)	Note Off	A
9n	kk (kk)	vv	(vv)	Note On (vv)=1-127	A
An	kk (kk)	vv	(vv)	Poly Key Pressure (as AMS)	T
Bn	00 (00)	mm	(mm)	Bank Select(MSB) (for Prog/Combi change)	*1 PB
Bn	01 (01)	vv	(vv)	Modulation1 (as Joy Stick +Y)	C
Bn	02 (02)	vv	(vv)	Modulation2 (as Joy Stick -Y)	C
Bn	04 (04)	vv	(vv)	Foot Pedal (as AMS & FX Dmod Src =Pedal)	C
Bn	05 (05)	vv	(vv)	Portamento Time	C
Bn	06 (06)	vv	(vv)	Data Entry (MSB) (for RPC edit)	C
Bn	07 (07)	vv	(vv)	Volume	C
Bn	08 (08)	vv	(vv)	Balance Control (for Post IFX Panpot control)	*2 C
Bn	0A (10)	vv	(vv)	Panpot	C
Bn	0B (11)	vv	(vv)	Expression	C
Bn	0C (12)	vv	(vv)	Effect Control 1 (as FX Dmod Src = FX1)	C
Bn	0D (13)	vv	(vv)	Effect Control 2 (as FX Dmod Src = FX2)	C
Bn	10 (16)	vv	(vv)	Multi Purpose Ctrl1 (as Ribbon Controller)	C
Bn	11 (17)	vv	(vv)	Multi Purpose Ctrl2 (as AMS & FX Dmod Src =KnobMod1)	C
Bn	12 (18)	vv	(vv)	Multi Purpose Ctrl3 (as Value Slider)	C
Bn	13 (19)	vv	(vv)	Multi Purpose Ctrl4 (as AMS & FX Dmod Src =KnobMod2)	C
Bn	14 (20)	vv	(vv)	(as AMS & FX Dmod Src =KnobMod3)	C
Bn	15 (21)	vv	(vv)	(as AMS & FX Dmod Src =KnobMod4)	C
Bn	20 (32)	bb	(bb)	Bank Select(LSB) (for Prog / Combi change)	*1 PB
Bn	26 (38)	vv	(vv)	Data Entry (LSB) (for RPC edit)	C
Bn	40 (64)	vv	(vv)	Hold1 (as Damper)	C
Bn	41 (65)	dd	(dd)	Portamento Off/On	*3 C
Bn	42 (66)	dd	(dd)	Sostenuto Off/On	*3 C
Bn	43 (67)	vv	(vv)	Soft Pedal	C
Bn	46 (70)	vv	(vv)	Sound Controller 1 (for Sustain Level control)	C
Bn	47 (71)	vv	(vv)	Sound Controller 2 (for Resonance/HPF Cutoff ctrl)	C
Bn	48 (72)	vv	(vv)	Sound Controller 3 (for Release Time control)	C
Bn	49 (73)	vv	(vv)	Sound Controller 4 (for Attack Time control)	C
Bn	4A (74)	vv	(vv)	Sound Controller 5 (for LPF Cutoff control)	C

Bn	4B (75)	vv	(vv)	Sound Controller 6 (for Decay Time control)	C
Bn	4C (76)	vv	(vv)	Sound Controller 7 (for LFO1 Speed control)	C
Bn	4D (77)	vv	(vv)	Sound Controller 8 (for LFO1 Pitch Depth control)	C
Bn	4E (78)	vv	(vv)	Sound Controller 9 (for LFO1 Delay control)	C
Bn	4F (79)	vv	(vv)	Sound Controller 10 (for Filter EG Intensity ctrl)	C
Bn	50 (80)	vv	(vv)	Multi Purpose Ctrl5 (as AMS & FX Dmod Src =SW 1)	C
Bn	51 (81)	vv	(vv)	Multi Purpose Ctrl6 (as AMS & FX Dmod Src =SW 2)	C
Bn	52 (82)	vv	(vv)	Multi Purpose Ctrl7 (as AMS & FX Dmod Src =Foot SW)	C
Bn	53 (83)	vv	(vv)	Multi Purpose Ctrl8 (as AMS & FX Dmod Src = CC#83)	C
Bn	5B (91)	vv	(vv)	Effect 1 Depth (for Send 2 Level control)	C
Bg	5C (92)	ee	(ee)	Effect 2 Depth (for All Insert FX Off/On)	*4 C
Bn	5D (93)	vv	(vv)	Effect 3 Depth (for Send 1 Level control)	C
Bg	5E (94)	ee	(ee)	Effect 4 Depth (for Master FX1 Off/On)	*4 C
Bg	5F (95)	ee	(ee)	Effect 5 Depth (for Master FX2 Off/On)	*4 C
Bn	60 (96)	00	(00)	Data Increment (for RPC edit)	C
Bn	61 (97)	00	(00)	Data Decrement (for RPC edit)	C
Bn	62 (98)	ss	(ss)	NRPN Param No.(LSB) (for NRPN select)	*5 C
Bn	63 (99)	tt	(tt)	NRPN Param No.(MSB) (for NRPN select)	*5 C
Bn	64(100)	0r	(0r)	RPN Param No. (LSB) (for RPN select)	*6 C
Bn	65(101)	00	(00)	RPN Param No. (MSB) (for RPN select)	*6 C
Bn	cc (cc)	vv	(vv)	Control data (for Seq. recording (cc)=0-101)	C,Q
Bn	78(120)	00	(00)	All Sound Off	C
Bn	79(121)	00	(00)	Reset All Controllers	C
Bn	7A(122)	00/7F	(00/127)	Local Control Off/On	A
Bn	7B(123)	00	(00)	All Notes Off	A
Bn	7C(124)	00	(00)	Omni Mode Off (as All Notes Off)	A
Bn	7D(125)	00	(00)	Omni Mode On (as All Notes Off)	A
Bn	7E(126)	00 - 10	(00 - 16)	Mono Mode On (as All Notes Off)	A
Bn	7F(127)	00	(00)	Poly mode On (as All Notes Off)	A
Cn	pp (pp)	--	--	Program Change (for Prog/Combi change)	*1 P
Dn	vv (vv)	--	--	Channel Pressure (as After Touch)	T
En	bb (bb)	bb	(bb)	Bender Change	C

AMS : Alternate Modulation Source

FX Dmod Src: Effect Dynamic Modulation Source

n : MIDI Channel No. (0 - 15) Usually Global Channel.

When in Combination/Sequencer/Song Play mode, each timbre's/track's channel.(Status is INT or BTH)

g : Always Global Channel No. (0 - 15)

x : Random

ENA : Same as Transmitted data

*1 : When Bank Map in Global mode is KORG;

MIDI In [Hex]	Program	Combination
mm,bb,pp = 00,00,	00 - 7F : Bank INT-A	000 - 127 : Bank INT-A 000 - 127
00,01,	00 - 7F : INT-B	000 - 127 : INT-B 000 - 127
00,02,	00 - 7F : INT-C	000 - 127 : INT-C 000 - 127
00,03,	00 - 7F : INT-D	000 - 127 : INT-D 000 - 127
00,04,	00 - 7F : INT-E	000 - 127 : INT-E 000 - 127
00,05,	00 - 7F : INT-F	000 - 127
00,08,	00 - 7F : EXB-A	000 - 127 : EXB-A 000 - 127
00,09,	00 - 7F : EXB-B	000 - 127 : EXB-B 000 - 127
00,0A,	00 - 7F : EXB-C	000 - 127 : EXB-C 000 - 127
00,0B,	00 - 7F : EXB-D	000 - 127 : EXB-D 000 - 127
00,0C,	00 - 7F : EXB-E	000 - 127 : EXB-E 000 - 127
00,0D,	00 - 7F : EXB-F	000 - 127 : EXB-F 000 - 127
00,0E,	00 - 7F : EXB-G	000 - 127 : EXB-G 000 - 127

79,00,	00 - 7F :	G	001 - 128
79,01-09,00	- 7F :	g(1)-g(9)	001 - 128
78,00,	00 - 7F :	g(d)	001 - 128

38,00,	00 - 7F :	G	001 - 128
3E,00,	00 - 7F :	g(d)	001 - 128

When Bank Map in Global mode is GM(2);

MIDI In [Hex]		Program		Combination
mm,bb,pp = 3F,00,	00 - 7F :	Bank INT-A	000 - 127 :	Bank INT-A 000 - 127
3F,01,	00 - 7F :	INT-B	000 - 127 :	INT-B 000 - 127
3F,02,	00 - 7F :	INT-C	000 - 127 :	INT-C 000 - 127
3F,03,	00 - 7F :	INT-D	000 - 127 :	INT-D 000 - 127
3F,04,	00 - 7F :	INT-E	000 - 127 :	INT-E 000 - 127
3F,05,	00 - 7F :	INT-F	000 - 127 :	INT-F 000 - 127
3F,08,	00 - 7F :	EXB-A	000 - 127 :	EXB-A 000 - 127
3F,09,	00 - 7F :	EXB-B	000 - 127 :	EXB-B 000 - 127
3F,0A,	00 - 7F :	EXB-C	000 - 127 :	EXB-C 000 - 127
3F,0B,	00 - 7F :	EXB-D	000 - 127 :	EXB-D 000 - 127
3F,0C,	00 - 7F :	EXB-E	000 - 127 :	EXB-E 000 - 127
3F,0D,	00 - 7F :	EXB-F	000 - 127 :	EXB-F 000 - 127
3F,0E,	00 - 7F :	EXB-G	000 - 127 :	EXB-G 000 - 127
79,00,	00 - 7F :	G	001 - 128	
79,01-09,00	00 - 7F :	g(1)-g(9)	001 - 128	
78,00,	00 - 7F :	g(d)	001 - 128	
00,00,	00 - 7F :	G	001 - 128	
38,00,	00 - 7F :	G	001 - 128	
3E,00,	00 - 7F :	g(d)	001 - 128	
3F,7F,	00 - 7F :	Mute (KORG MUTE)		
(XG) 00,01 -	:	Assign correspond program in G, g(1) - g(9)		
(GS) 01,00 -	:	Assign correspond program in G, g(1) - g(9)		

*2 : When in Program/Sampling mode, Global channel
 When in Combination/Sequencer/Song Play mode, each IFX's channel.

*3 : dd = 00 - 3F : Off
 40 - 7F : On

*4 : ee = 00 : Off
 01 - 7F : On

*5 : tt,ss = 00,02 : Arpeggiator Off/On
 = 00,0A : Arpeggiator Gate control
 = 00,0B : Arpeggiator Velocity control

When in Program/Combination mode, Global channel message is valid.
 When in Sequencer/Song Play mode, Control Track's channel message is valid.
 Data Entry LSB value has no effect.

tt,ss = 01,08 : Vibrato Rate
 tt,ss = 01,09 : Vibrato Depth
 tt,ss = 01,0A : Vibrato Delay
 tt,ss = 01,20 : Filter Cutoff
 tt,ss = 01,21 : Filter Resonance
 tt,ss = 01,63 : EG Attack Time
 tt,ss = 01,64 : EG Decay Time
 tt,ss = 01,66 : EG Release Time
 tt,ss = 14,kk : Drum Filter Cutoff *
 tt,ss = 15,kk : Drum Filter Resonance *
 tt,ss = 16,kk : Drum EG Attack Time *
 tt,ss = 17,kk : Drum EG Decay Time *
 tt,ss = 18,kk : Drum Coarse Tune *
 tt,ss = 19,kk : Drum Fine Tune *
 tt,ss = 1A,kk : Drum Volume *
 tt,ss = 1C,kk : Drum Panpot *
 tt,ss = 1D,kk : Drum Rev Send(Send2) *
 tt,ss = 1E,kk : Drum Cho Send(Send1) *

* Only valid when Part Mode is Drum, MDrml - Mdrm4.
 kk: Drum Inst No. (0C - 6C = C0 - C8)
 Data Entry LSB value has no effect.

*6 : r = 0 : Pitch Bend Sensitivity (Bend Range).
 = 1 : Fine Tune (Detune)

= 2 : Coarse Tune (Transpose)
 For drum program, both of Fine Tune and Coarse Tune affect to Detune.
 Data Entry LSB value has no effect for Pitch Bend Sensitivity and Coarse Tune.

2-2 SYSTEM COMMON MESSAGES

[H] :Hex, [D] :Decimal

Status	Second	Third	Description (Use for)
[Hex]	[H] [D]	[H] [D]	
F2	ss (ss)	tt (tt)	Song Position Pointer (Location) *7
			ss : Least significant [LSB]
			tt : Most significant [MSB]
F3	ss (ss)		Song Select (Song or Cue List select) *7
			ss : Song(0-127)/Cue List(0-19) No.

Receive when in Sequencer mode (External Clock)

*7 : When in the Cue List page (Sequencer mode P1), these respond to Location and No. of Cue List.

2-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Use for.....)
F8	Timing Clock (Tempo, AMS. & FX Dmod Src) *8
FA	Start (Seq Start & Arpeggiator Control) *8
FB	Continue (Seq Continue start & Arpeggiator Control) *8
FC	Stop (Seq Stop & Arpeggiator Control) *8
FE	Active Sensing (MIDI Connect check)

*8 : Receive when MIDI Clock in Global mode is External MIDI or External mLAN.

2-4 SYSTEM EXCLUSIVE

2-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

DEVICE INQUIRY (When received this message, transmits INQUIRY MESSAGE REPLY)

[F0,7E,nn,06,01,F7] 3rd byte nn : Channel = 0 - F : Global Channel
 = 7F : Any Channel

GM System On (Receive when in Song Play mode)

[F0,7E,nn,09,01,F7] 3rd byte nn : Channel = 0 - F : Global Channel
 = 7F : Any Channel

2-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

Master Volume

[F0,7F,0g,04,01,vv,mm,F7] 3rd byte g : Global Channel
 6th byte vv : Value(LSB)
 7th byte mm : Value(MSB)
 mm,vv = 00,00 - 7F,7F : Min - Max

Master Balance

[F0,7F,0g,04,02,vv,mm,F7] 3rd byte g : Global Channel
 6th byte vv : Value(LSB)
 7th byte mm : Value(MSB)
 mm,vv = 00,00:Left, 40,00:Center, 7F,7F:Right

Master Fine Tune (Control Master Tune(cent) in Global)

[F0,7F,0g,04,03,vv,mm,F7] 3rd byte g : Global Channel
 6th byte vv : Value(LSB)
 7th byte mm : Value(MSB)
 mm,vv = 20,00:-50, 40,00:+00, 60,00:+50

Master Coarse Tune (Control Transpose (chromatic step) in Global)

[F0,7F,0g,04,04,vv,mm,F7] 3rd byte g : Global Channel
 6th byte vv : Value(LSB)
 7th byte mm : Value(MSB)
 mm,vv = 34,00:-12, 40,00:+00, 4C,00:+12

Func	Description
12	MODE REQUEST
10	CURRENT PROGRAM PARAMETER DUMP REQUEST
1C	PROGRAM PARAMETER DUMP REQUEST
19	CURRENT COMBINATION PARAMETER DUMP REQUEST
1D	COMBINATION PARAMETER DUMP REQUEST
18	SEQUENCE DATA DUMP REQUEST
0E	GLOBAL DATA DUMP REQUEST
0D	DRUMKIT DATA DUMP REQUEST
34	ARPEGGIO PATTERN DATA DUMP REQUEST
0F	ALL DATA(PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ)DUMP REQUEST
11	PROGRAM WRITE REQUEST
1A	COMBINATION WRITE REQUEST
40	CURRENT PROGRAM PARAMETER DUMP
4C	PROGRAM PARAMETER DUMP
49	CURRENT COMBINATION PARAMETER DUMP
4D	COMBINATION PARAMETER DUMP
48	SEQUENCE DATA DUMP
51	GLOBAL DATA DUMP
52	DRUMKIT DATA DUMP
69	ARPEGGIO PATTERN DATA DUMP
50	ALL DATA(PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ)DUMP
4E	MODE CHANGE
41	PARAMETER CHANGE
53	DRUMKIT PARAMETER CHANGE
6D	ARPEGGIO PATTERN PARAMETER CHANGE

(1) MODE REQUEST R

F0, 42, 3g, 50 Excl Header
 12 Function
 F7 End of Excl

(Receives this message, and transmits Func=42 message)

(2) CURRENT PROGRAM PARAMETER DUMP REQUEST R

F0, 42, 3b, 50 Excl Header
 10 Function
 00 Reserved
 F7 End of Excl

(Receives this message, and transmits Func=40 or Func=24 message)

(3) PROGRAM PARAMETER DUMP REQUEST R

F0, 42, 3g, 50 Excl Header
 1C Function
 00kk bbbb Kind and Bank (*1)
 0ppp pppp Program No.
 00 Reserved
 F7 End of Excl

(Receives this message, and transmits Func=4C or Func=24 message)

(4) CURRENT COMBINATION PARAMETER DUMP REQUEST R

F0, 42, 3g, 50 Excl Header
 19 Function
 00 Reserved
 F7 End of Excl

(Receives this message, and transmits Func=49 or Func=24 message)

(5) COMBINATION PARAMETER DUMP REQUEST R

F0, 42, 3g, 50	Excl Header
1D	Function
00kk bbbb	Kind and Bank (*2)
0ccc cccc	Combination No.
00	Reserved
F7	End of Excl

(Receives this message, and transmits Func=4D or Func=24 message)

(6) SEQUENCE DATA (In Memory) DUMP REQUEST R

F0, 42, 3g, 50	Excl Header
18	Function
00	Reserved
F7	End of Excl

(Receives this message, and transmits Func=48 or Func=24 message)

(7) GLOBAL DATA DUMP REQUEST R

F0, 42, 3g, 50	Excl Header
0E	Function
0000 000k	Kind(k = 0 : size is same as TRITON, 1 : TRITON STUDIO)
F7	End of Excl

(Receives this message, and transmits Func=51 or Func=24 message)

(8) DRUMKIT DATA (In Memory) DUMP REQUEST R

F0, 42, 3g, 50	Excl Header
0D	Function
0000 00kk	Kind (*3-1)
0ddd dddd	Drumkit No. (*3-1)
00	Reserved
F7	End of Excl

(Receives this message, and transmits Func=52 or Func=24 message)

(9) ARPEGGIO PATTERN DATA DUMP REQUEST R

F0, 42, 3g, 50	Excl Header
34	Function
0kk0 0000	Kind (*3-2)
0000 00aa	ARPPAT No. MSB (*3-2)
0aaa aaaa	ARPPAT No. LSB (*3-2)
F7	End of Excl

(Receives this message, and transmits Func=52 or Func=24 message)

(10) ALL DATA(PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ)DUMP REQUEST R

F0, 42, 3g, 50	Excl Header (*10)
0F	Function
0000 000k	Kind(k = 0 : For TRITON, 1 : For TRITON STUDIO)
F7	End of Excl

(Receives this message, and transmits Func=50 or Func=24 message)

(11) PROGRAM WRITE REQUEST R

F0, 42, 3g, 50	Excl Header
11	Function
0000 bbbb	Write Program Bank (*4)
0ppp pppp	Write Program No.
F7	End of Excl

(Receives this message, write the data and transmits Func=21 or Func=22 message)

(12) COMBINATION WRITE REQUEST R

F0, 42, 3g, 50	Excl Header
1A	Function
0000 bbbb	Write Combination Bank (*4)
0ccc cccc	Write Combination No.
F7	End of Excl

(Receives this message, write the data and transmits Func=21 or Func=22 message)

(13) CURRENT PROGRAM PARAMETER DUMP R , T

F0, 42, 3g, 50	Excl Header	
40	Function	
0000 000t	Program Type (t = 0 : PCM, 1 : MOSS)	
0ddd dddd	Data	(*5,*6, TABLE1,2)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=10 message, and transmits this message & data.

When the Prog No. is changed by SW, transmits this message & data.

(14) PROGRAM PARAMETER DUMP R , T

F0, 42, 3g, 50	Excl Header	
4C	Function	
0000 00vv	Available Bank	(*7)
00kk bbbb	Kind and Bank	(*7)
0ppp pppp	Program No.	
0ddd dddd	Data	(*5,*8, TABLE1,2)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=1C message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(15) CURRENT COMBINATION PARAMETER DUMP R , T

F0, 42, 3g, 50	Excl Header	
49	Function	
00	Reserved	
0ddd dddd	Data	(*5,*9, TABLE3)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=19 message, and transmits this message & data.

When the Combi No. is changed by SW, transmits this message & data.

(16) COMBINATION PARAMETER DUMP R , T

F0, 42, 3g, 50	Excl Header	
4D	Function	
00	Reserved	
00kk bbbb	Kind and Bank	(*10)
0ppp pppp	Combination No.	
0ddd dddd	Data	(*5,*11, TABLE3)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=1C message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(17) SEQUENCE DATA (In Memory) DUMP R , T

F0, 42, 3g, 50	Excl Header	
48	Function	
00	Reserved	
0sss ssss	Seq. data Size	[4Bytes] (*12-1)
:	:	
0mmmm mmmmm	Song Data Adress	(*5,*12-2, TABLE10)
:	:	
0ccc cccc	CueLists Data	(*5,*12-3, TABLE11)
:	:	
0ddd dddd	Sequence Data	(*5,*12-4, TABLE12)
F7	End of Excl	

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=18 message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(18) GLOBAL DATA DUMP R , T

F0, 42, 3g, 50	Excl Header	
51	Function	

0000 000k Kind(k = 0 : size is same as TRITON, 1 : TRITON STUDIO)
 0ddd dddd Data (*5,*13, TABLE4)

:

F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=0E message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(19) DRUMKIT DATA DUMP R , T

F0, 42, 3g, 50 Excl Header
 52 Function
 0000 00kk Kind (*14-1)
 0ddd dddd Drumkit No. (*14-1)
 00 Reserved
 0ddd dddd Data (*5,*15, TABLE7)

:

F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=0E message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(20) ARPEGGIO PATTERN DATA DUMP R , T

F0, 42, 3g, 50 Excl Header
 69 Function
 0kk0 0000 Kind (*14-2)
 0000 00aa ARPPAT No. MSB (*14-2)
 0aaa aaaa ARPPAT No. LSB (*14-2)
 0ddd dddd Data (*5,*14, TABLE8)

:

F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=34 message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(21) ALL DATA (PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ) DUMP R , T

F0, 42, 3g, 50 Excl Header
 50 Function
 0000 00vv Available Bank (*16)
 00 Reserved
 0sss ssss Seq. data Size [4Bytes](*12-1)
 : :
 0ddd dddd Data (*5,*17, TABLE1,2,3,4,7,8,10,11,12)

F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=34 message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(22) MODE CHANGE R , T

F0, 42, 3g, 50 Excl Header
 4E Function
 0000 mmmm Mode (*18)

F7 End of Excl

(Receives this message & data, changes the Mode, and transmits Func=23 or Func=24

When the Mode is changed by SW, transmits this message & data.

(23) PARAMETER CHANGE R , T

F0, 42, 3g, 50 Excl Header
 41 Function
 0000 mmmm Mode (*18)
 0000 0000 Parameter ID (MSB)
 0ppp pppp Parameter ID (LSB) (TABLE 1,2,3,5,6,9)
 0000 0000 Parameter SUB ID (MSB)
 0qqq qqqq Parameter SUB ID (LSB) (TABLE 1,2,3,5,6,9)
 0vvv vvvv Value (MSB bit7-18) (*19)

0vvv vvvv Value (LSB bit0~6) (*19)
 F7 End of Excl
 (Receives this message & data, and transmits Func=23 or Func=24 messages)
 When the Parameter No. is changed by SW, transmits this message & data.

(24) DRUMKIT PARAMETER CHANGE R , T
 F0, 42, 3g, 50 Excl Header
 53 Function
 0kkk kkkk Drumkit No. (kk = 00-8F (: 00-143 with MSB))
 0sss ssss Index No. (ss = 00-7F (: C-1-G9))
 0000 000k MSB of Drumkit No. (TABLE 7)
 0ppp pppp Parameter No.(LSB) (TABLE 7)
 0vvv vvvv Value (MSB bit7~18) (*19)
 0vvv vvvv Value (LSB bit0~6) (*19)
 F7 End of Excl
 (Receives this message & data, and transmits Func=23 or Func=24 messages)

(25) ARPEGGIO PATTERN PARAMETER CHANGE R , T
 F0, 42, 3g, 50 Excl Header
 6D Function
 0000 000b Arpeggio AorB b = 0 : Arpeggio A 1 : Arpeggio B
 0000 00aa Pattern No. MSB (bit 8-7)
 0aaa aaaa Pattern No. LSB (bit 6-0) a = 000-1FA (: 000-506)
 0sss ssss Step No. ss = 00-2F (: 00-47)
 0ttt tttt Tone No. tt = 00-0B (: 00-11)
 0000 0000 Parameter No. (MSB) (TABLE 8)
 0ppp pppp Parameter No. (LSB) (TABLE 8)
 0vvv vvvv Value (MSB bit7~18) (*19)
 0vvv vvvv Value (LSB bit0~6) (*19)
 F7 End of Excl
 (Receives this message & data, and transmits Func=23 or Func=24 messages)

(26) MODE DATA T
 F0, 42, 3g, 50 Excl Header
 42 Function
 0000 mmmm Mode (*18)
 0ooo oooo Option (*20)
 0sss ssss Setup data1 (*20)
 0ddd dddd Setup data2 (*20)
 00 Reserved
 F7 End of Excl
 (Receives FUNC=12 message, and transmits this message & data.)

(27) MIDI IN DATA FORMAT ERROR T
 F0, 42, 3g, 50 Excl Header
 26 MIDI IN DATA FORMAT ERROR
 0ccc cccc Error Code (*21)
 F7 End of Excl
 (Transmits this message when there is an error in the MIDI IN message (ex.data length).)

(28) DATA LOAD COMPLETED (ACK) T
 F0, 42, 3g, 50 Excl Header
 23 DATA LOAD COMPLETED
 F7 End of Excl
 (Transmits this message when DATA LOAD,PROCESSING have been completed.)

(29) DATA LOAD ERROR (NAC) T
 F0, 42, 3g, 50 Excl Header
 24 DATA LOAD ERROR
 0ccc cccc Error Code (*22)
 F7 End of Excl
 (Transmits this message when DATA LOAD,PROCESSING have not been completed (ex. protected).)

```

(30) WRITE COMPLETED                                     T
      F0, 42, 3g, 50      Excl Header
      21                  WRITE COMPLETED
      F7                  End of Excl
(Transmits this message when DATA WRITE MIDI have been completed.)

```

```

(31) WRITE ERROR                                           T
      F0, 42, 3g, 50      Excl Header
      22                  WRITE ERROR
      0ccc cccc           Error Code                      (*23)
      F7                  End of Excl
(Transmits this message when DATA WRITE MIDI have not been completed.)

```

//////// * The each bank's value is same as value of the internal bank

```

*1
  k = 0 : Dump Program Bank IA~IE(IF) (size is same as TRITON)
    1 : 1 Bank Programs (Use b)
    2 : 1 Program      (Use b & pp)
    3 : TRITON STUDIO All Program Bank IA~IE(IF)/EA~EG

```

```

  b = 0 - 4 : Bank INT A-E
        5 : Bank INT F
  6 - 12 : Bank EXB A-G

```

```

*2
  k = 0 : Dump Combination Bank IA~ID (size is same as TRITON)
    1 : 1 Bank Combinations      (Use b)
    2 : 1 Combination            (Use b & cc)
    3 : TRITON STUDIO All Combination Bank IA~IE/EA~EG

```

```

  b = 0 - 4 : Bank INT A-E
    5 - 11 : Bank EXB A-G

```

```

*3
  3-1
    k = 00 : All Drumkits[0-63] (For TRITON)
      01 : 1 Drumkit      (Use d)
      10 : All Drumkits[0-143](For TRITON STUDIO/TRITON-Rack)

```

```

    d = 0-8F : Drumkit 0-143

```

```

  3-2
    k = 00 : All Arpeggio Patterns[0-231](For TRITON)
      10 : 1 Arpeggio Pattern      (Use a)
      01 : All Arpeggio Patterns[0-327](For TRITON-Rack)
      11 : All Arpeggio Patterns[0-506](For TRITON STUDIO)

```

```

    a = 0-1FA : Arpeggio Pattern 0-506

```

```

*4 PROGRAM,COMBINATION BANK
  b = 0 - 4 : Bank INT A-E
        5 : Bank INT F(Only for Program)
  6 - 12 : Bank EXB A-G

```

*5 DATA CONVERT METHOD(INTERNAL DATA<-->MIDI DATA)

```

+-----+
| Internal 7byte data <--convert--> MIDI 8 byte data |
| example) Internal data(bit image) MIDI data(bit image) |
|      Aaaaaaaa      0GFEDCBA |
|      Bbbbbbbb      0aaaaaaa |
|      Cccccccc      0bbbbbbb |
|      Dddddddd      0ccccccc |
|      Eeeeeeee      0ddddddd |
|      Ffffffff      0eeeeeee |
|      Gggggggg      0fffffff |
|      Hhhhhhhh      0ggggggg |
|      Iiiiiiii      0NMLKJIH |
+-----+

```

:	0hhhhhhh
:	:
Vvvvvvvv	000000WV
Wwwwwwww	0vvvvvvv
	0wwwwwww
	11110111 (EOX=7FH)

*6 PROGRAM PARAMETER (IN CURRENT BUFFER) DUMP FORMAT

*PCM
*MOSS

*7

v = 0 : Bank TRITON A~E(No MOSS Synthesizer)
 1 : Bank TRITON A~F(MOSS Synthesizer is loaded)
 2 : Bank TRITON STUDIO IA~IE/EA~EG(No MOSS Synthesizer)
 3 : Bank TRITON STUDIO IA~IF/EA~EG(MOSS Synthesizer is loaded)

k = 0 : Dump Program Bank IA~IE(IF) (size is same as TRITON)
 1 : 1 Bank Program (Use v & b)
 2 : 1 Program (Use b & pp)
 3 : TRITON STUDIO All Program Bank IA~IE(IF)/EA~EG

b = 0 - 5 : Bank INT A-F
 6 - 12 : Bank EXB A-G

*8 PROGRAM PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT

*9 COMBINATION PARAMETER (IN CURRENT BUFFER) DUMP FORMAT

*10

k = 0 : Dump Combination Bank IA~ID (size is same as TRITON)
 1 : 1 Bank Combination (Use b)
 2 : 1 Combination (Use b & cc)
 3 : TRITON STUDIO All Combination Bank IA~IE/EA~EG

b = 0 - 4 : Bank INT A-E
 5 - 11 : Bank EXB A-G

*11 COMBINATION PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT

*12 SEQUENCE DATA'S OFFSET,SIZE,ADDRESS FORMAT

12-1 : Sequence Data Size (4Bytes)
 'Seq Data Size' is a all song data's length. A unit is Byte.
 [Data Size (bit21~27)],
 [Data Size (bit14~20)],
 [Data Size (bit 7~13)],
 [Data Size (bit 0~ 6)]
 'All song data' is 'SEQ DATA PARAMETERS(TABLE 10)', 'CUE LISTS DATA(TABLE 11)' and
 'SEQ DATA(TABLE 12)'.
 12-2 : Song Data Adress
 12-3 : CueLists Data
 12-4 : Sequence Data

*13 GLOBAL DATA (IN INTERNAL MEMORY) DUMP FORMAT

*14 ARPEGGIO PATTERN DATA (IN INTERNAL MEMORY) DUMP FORMAT

*14

14-1
 k = 00 : All Drumkits[0-63] (For TRITON)
 01 : 1 Drumkit (Use d)
 10 : All Drumkits[0-143](For TRITON STUDIO/TRITON-Rack)

d = 0-8F : Drumkit 0-143

14-2

k = 00 : All Arpeggio Patterns[0-231](For TRITON)
 10 : 1 Arpeggio Pattern (Use a)
 01 : All Arpeggio Patterns[0-327](For TRITON-Rack)
 11 : All Arpeggio Patterns[0-506](For TRITON STUDIO)

a = 0-1FA : Arpeggio Pattern 0-506

*15 DRUMS DATA (IN INTERNAL MEMORY) DUMP FORMAT

*16

Program
 v = 0 : Bank TRITON A~E(No MOSS Synthesizer)
 1 : Bank TRITON A~F(MOSS Synthesizer is loaded)
 2 : Bank TRITON STUDIO IA~IE/EA~EG(No MOSS Synthesizer)
 3 : Bank TRITON STUDIO IA~IF/EA~EG(MOSS Synthesizer is loaded)

*17 All DATA (PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ) DUMP FORMAT

[Global Data],
 [Drums Data],
 [Arpeggio Pattern DATA],
 [All Combination Parameter Data],
 [All Program Parameter Data],
 [Song Data Address],
 [CueLists Data],
 [Sequence Data]

*18

mmm = 0 : COMBI PLAY
 1 : COMBI EDIT
 2 : PROG PLAY
 3 : PROG EDIT
 4 : SEQUENCER
 5 : SONGPLAY
 6 : SAMPLING
 7 : GLOBAL
 8 : DISK

*19 VALUE DATA FORMAT (Use at PARAMETER CHANGE, DRUM KIT PARAMETER CHANGE)

Bit15-13 of Value Data is the Sign Flag, and each bit has the same value
 Value Data SSSHHHHH LLLLLLLL (S=Sign H,L=13bit data)
 MIDI Data OSHHHHHL OLLLLLLL

*20

oo : bit 0 = 0 : No MOSS Synthesizer, = 1 : MOSS Synthesizer is loaded
 ss : bit 0,1 = 0 : Note Receive is EVEN, = 1 : ODD, = 2 : ALL
 bit 3,4 = 0 : Seq Clock is internal, = 1 : External = 2 : External

mLAN

dd : bit 0 = 0 : Prog Mem is not protected, = 1 : protected
 bit 1 = 0 : Combi Mem is not protected, = 1 : protected
 bit 2 = 0 : Seq Mem is not protected, = 1 : protected
 bit 3 = 0 : Drums Mem is not protected, = 1 : protected
 bit 4 = 0 : ArpPat Mem is not protected, = 1 : protected

*21

cc = 0 : Received Data Length is wrong
 1 : Received Function code is not registered
 40 : Another type error

*22

cc = 0 : Dest Memory is protected
 1 : Dest Bank/Prog/Param is not exist
 2 : The mode is wrong
 3 : Memory over flow
 40 : Another type error

*23

cc = 0 : Dest Memory is protected
 1 : Dest Bank/Prog is not exist
 2 : The mode is wrong
 40 : Another type error

[TABLE 1] PROGRAM PARAMETERS (for PCM Synth)

2002.01.30

No. : No. in the PROGRAM DUMP DATA.

PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE.

Left side of ',' is Parameter ID, and right side is SUB ID.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00 : 15	PROGRAM NAME (Head) : PROGRAM NAME (Tail)	20~~7F		----
INSERT EFFECT 1 PARAMETERS				
16 : 31	Insert Effect 1 Parameter Structure (16Bytes) (See midifx.txt.)			1F,?? : 1F,??
32	Effect Type	00~~59 , 00:No Effect ~~ 89:Reverb - Gate		1E,00
b0~~b5	(Reserved)			----
33	b6 ON/OFF	0:Off, 1:ON		1E,05
b7	CHAIN	0:Not chain, 1:Chain		1E,1E
34	(Reserved)			----
35	(Reserved)			----
36	PAN	00~~7F : L000~~R127		1E,0A
37	BUS Select	00:L/R, 01~~04:1~~4, 05:1/2, 06:3/4, 07:Off		1E,0F
38	Send 1 Level	00~~7F : 00~~127		1E,14
39	Send 2 Level	00~~7F : 00~~127		1E,19
INSERT EFFECT 2 PARAMETERS				
40 : 55	Insert Effect 2 Parameter Structure (16Bytes) (See midifx.txt.)			20,?? : 20,??
56	Effect Type	00~~66 , 00:No Effect ~~ 102:Hold Delay		1E,01
57 : 63	INSERT EFFECT 2 PARAMETERS (Same as INSERT EFFECT 1 (33 ~~ 39) 7 Bytes) SID : SID of 'INSERT EFFECT 1' + 1			1E,06 : 1E,1F
INSERT EFFECT 3 PARAMETERS				
64 : 79	Insert Effect 3 Parameter Structure (16Bytes) (See midifx.txt.)			21,?? : 21,??
80	Effect Type	00~~66 , 00:No Effect ~~ 102:Hold Delay		1E,02
81 : 87	INSERT EFFECT 3 PARAMETERS (Same as INSERT EFFECT 1 (33 ~~ 39) 7 Bytes) SID : SID of 'INSERT EFFECT 1' + 2			1E,07 : 1E,20
INSERT EFFECT 4 PARAMETERS				
88				22,??

103	:	Insert Effect 4 Parameter Structure (16Bytes) (See midifx.txt.)	:	22,??
104		Effect Type 00~~66 , 00:No Effect ~~ 102:Hold Delay		1E,03
105	:	INSERT EFFECT 4 PARAMETERS (Same as INSERT EFFECT 1 (33 ~~ 39) 7 Bytes)	:	1E,08
111	:	SID : SID of 'INSERT EFFECT 1' + 3	:	1E,21
INSERT EFFECT 5 PARAMETERS				
112	:	Insert Effect 5 Parameter Structure (16Bytes) (See midifx.txt.)	:	23,??
127	:		:	23,??
128	:	INSERT EFFECT 5 PARAMETERS (Same as INSERT EFFECT 1 (32 ~~ 39) 8 Bytes except 'CHAIN' parameter)	:	1E,04
135	:	SID : SID of 'INSERT EFFECT 1' + 4	:	1E,1D
MASTER EFFECT PARAMETERS				
136	:	MFx1 Effect Parameter Structure (16Bytes) (See midifx.txt.)	:	25,??
151	:		:	25,??
152		MFx1 Effect Type 00~~59 , 00:No Effect ~~ 89:Reverb - Gate		24,00
b0~~b5 (Reserved)				
153		b6 MFx1 ON/OFF 0:Off, 1:ON		24,02
b7 (Reserved)				
154		(Reserved)		----
155		(Reserved)		----
156	:	MFx2 Effect Parameter Structure (16Bytes) (See midifx.txt.)	:	26,??
171	:		:	26,??
172		MFx2 Effect Type 00~~59 , 00:No Effect ~~ 89:Reverb - Gate		24,01
b0~~b5 (Reserved)				
173		b6 MFx2 ON/OFF 0:Off, 1:ON		24,03
b7 (Reserved)				
174		(Reserved)		----
175		(Reserved)		----
176		MFx1 Return Level 00~~7F : 00~~127		24,04
177		MFx2 Return Level 00~~7F : 00~~127		24,05
b0~~b1 MFx Chain Signal 0:LR Mix, 1:L Only, 2:R Only				
178		b2 MFx Chain Direction 0:MFx1 -> MFx2, 1:MFx2 -> MFx1		24,07
b3 MFx Chain ON/OFF 0:Chain Off, 1:On				
179		MFx Chain Level 00~~7F : 00~~127		24,09
180		Master EQ Low Gain EE~~12 : -18.0~~+18.0dB (0.5dB step)		27,00
181		Master EQ Mid Gain EE~~12 : -18.0~~+18.0dB (0.5dB step)		27,01

182	Master EQ High Gain	EE~~12 : -18.0~~+18.0dB (0.5dB step)	27,02
183	Master EQ Low Fc	00~~31 , 0:20Hz ~ 49:1.00kHz	27,03
184	Master EQ Mid Fc	00~~61 , 0:300Hz ~ 97:10.00kHz	27,04
185	Master EQ High Fc	00~~C3 , 0:500Hz ~ 195:20.00kHz	27,05
186	Master EQ Mid Q	00~~5F , 0:0.5 ~ 95:10.0 (0.1 step)	27,06
187	Master EQ Low DMod	00~~1F : Off~Tempo(See '*1' in midifx.txt)	27,07
188	Master EQ High DMod	00~~1F : Off~Tempo(See '*1' in midifx.txt)	27,08
189	(Reserved)		----
190	Arp.Gate Control		----
191	Arp.Velocity Control		----
ARPEGGIATOR PARAMETERS			
192	TEMPO	28~~F0 : 40~~240	1C,00
193	SWITCH	0:OFF, 1:ON	1C,01
194	PATTERN NO.	00~~1FF : 0~~511 0~~1FF : 0~~511 **1-8	1D,00
195	b0~~1 OCTAVE	00~~03 : 0~~4	1D,02
	b2~~4 RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4	1D,01
	b5 PATTERN NO. MSB	0 or 1 0~~1FF : 0~~511 **1-8	1D,00
196	GATE	00~~64 : 0~~100[%], 65:Step	1D,03
197	VELOCITY	01~~7F : 1~~127, 80:Key, 81:Step	1D,04
198	SWING	9C~~64 : -100~~100	1D,05
199	bit0 SORT	0:OFF, 1:ON	1D,06
	bit1 LATCH	0:OFF, 1:ON	1D,07
	bit2 KEY SYNC.	0:OFF, 1:ON	1D,08
	bit3 KEYBOARD	0:OFF, 1:ON	1D,09
200	TOP KEY	00~~7F : C-1~~G9	1D,0A
201	BOTTOM KEY	00~~7F : C-1~~G9	1D,0B
202	TOP VELOCITY	01~~7F : 1~~127	1D,0C
203	BOTTOM VELOCITY	01~~7F : 1~~127	1D,0D
COMMON PARAMETERS			
204	b0~~1 OSCILLATOR MODE	0:Single, 1:Double, 2:Drums	00,01
	bit2 KEY ASSIGN	0:Poly, 1:Mono	00,02
	bit3 LEGATO	0:OFF, 1:ON	00,03
	b4~~5 PRIORITY	0:Low, 1:High, 2:Last	00,04
	bit6 SINGLE TRIGGER	0:OFF, 1:ON	00,05

TRITON STUDIO MIDI IMPLEMENTATION

Version 1.9 (Aug.01.'02)

	bit7	HOLD	0:OFF, 1:ON		00,06
	b0~~6	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off		00,07
205	bit7	USE DKIT SETTING	0:OFF, 1:ON		00,08
206		CATEGORY	00~~0F : 0~~15		00,00
207		SCALE TYPE	00~~1A : **1-1		00,09
208		SCALE KEY	00~~0C : C~~B		00,0A
209		RANDOM INTENSITY	00~~07 : 0~~7		00,0B
	b0~~5	SW 1 ASSIGN TYPE	00~~0C : **1-2		00,0C
210	bit6	SW1 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,10
	bit7	SW 1 ON/OFF	0:OFF, 1:ON		00,1E
	b0~~5	SW 2 ASSIGN TYPE	00~~0C : **1-2		00,0D
211	bit6	SW2 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,11
	bit7	SW 2 ON/OFF	0:OFF, 1:ON		00,0F
	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		00,12
212	bit7	REALTIME CONTROLS	0:A, 1:B		00,16
213		KNOB 2 ASSIGN	00~~7C : **1-3		00,13
214		KNOB 3 ASSIGN	00~~7C : **1-3		00,14
215		KNOB 4 ASSIGN	00~~7C : **1-3		00,15
	PITCH EG				
216		START LEVEL	9D~~63 : -99~~99		01,00
217		ATTACK TIME	00~~63 : 00~~99		01,01
218		ATTACK LEVEL	9D~~63 : -99~~99		01,02
219		DECAY TIME	00~~63 : 00~~99		01,03
220		RELEASE TIME	00~~63 : 00~~99		01,04
221		RELEASE LEVEL	9D~~63 : -99~~99		01,05
222		A.M.SOURCE (LEVEL1)	00~~2A : **1-4	Alternate Modulation	01,08
223		INT BY A.M.(LEVEL1)	9D~~63 : -99~~99		01,09
224		A.M.SOURCE (LEVEL2)	00~~2A : **1-4	Alternate Modulation	01,0A
225		INT BY A.M.(LEVEL2)	9D~~63 : -99~~99		01,0B
226		A.M.SOURCE (TIME)	00~~2A : **1-4	Alternate Modulation	01,06
227		INT BY A.M.(TIME)	9D~~63 : -99~~99		01,07
	b0~~1	START (A.M.LEVEL1)	FF:-, 0:OFF, 1:+		01,0E
	b2~~3	ATTACK (A.M.LEVEL1)	FF:-, 0:OFF, 1:+		01,0F
228	b4~~5	START (A.M.LEVEL2)	FF:-, 0:OFF, 1:+		01,10
	b6~~7	ATTACK (A.M.LEVEL2)	FF:-, 0:OFF, 1:+		01,11

229	b0~~1	ATTACK (A.M.TIME)	FF:-, 0:OFF, 1:+		01,0C
	b2~~3	DECAY (A.M.TIME)	FF:-, 0:OFF, 1:+		01,0D
OSCILLATOR 1					
230	bit7	HI START OFFSET	0:OFF, 1:ON		02,02
	bit6	HI REVERSE	0:OFF, 1:ON		02,03
231	b0~~6	HI SAMPLE NO.(MSB)	00~~03E7 : 00~~999		02,01
		HI SAMPLE NO.(LSB)	**1-9		
232		HI BANK	0:ROM, 1:RAM, ~~???	??? is depend on PCM option.	02,00
233		HI LEVEL	00~~7F : 00~~127		02,04
234	bit7	LOW START OFFSET	0:OFF, 1:ON		02,07
	bit6	LOW REVERSE	0:OFF, 1:ON		02,08
235	b0~~6	LOW SAMPLE NO.(MSB)	00~~03E7 : 00~~999		02,06
		LOW SAMPLE NO.(LSB)			
236		LOW BANK	0:ROM, 1:RAM, ~~???	??? is depend on PCM option.	02,05
237		LOW LEVEL	00~~7F : 00~~127		02,09
238		DELAY START	00~~60,61 : **1-5		02,0A
239		VEL M.SAMPLE SW	01~~7F : 01~~127	(For Vel Split)	02,0B
240		VEL ZONE BOTTOM	01~~7F : 01~~127		02,0C
241		VEL ZONE TOP	01~~7F : 01~~127		02,0D
OSCILLATOR 1 LFO 1					
242	b0~~4	WAVEFORM	0~~14 : **1-6		03,00
	bit7	KEY SYNC.	0:OFF, 1:ON		03,01
243		FREQUENCY	00~~63 : 00~~99		03,02
244		OFFSET	9D~~63 : -99~~99		03,03
245		DELAY	00~~63 : 00~~99		03,04
246		FADE	00~~63 : 00~~99		03,05
247	bit7	MIDI/TEMPO SYNC.	0:OFF, 1:ON		03,0A
	b6~~4	SYNC BASE NOTE	0:16,1:8T,2:8,3:4T,4:4,5:2T,6:2,7:1		03,0B
	bit7	TIMES	00~~0F : 00~~16		03,0C
248		A.M.SOURCE (TIME1)	00~~2A : **1-4	Alternate Modulation	03,06
249		INT BY A.M.(TIME1)	9D~~63 : -99~~99		03,07
250		A.M.SOURCE (TIME2)	00~~2A : **1-4	Alternate Modulation	03,08
251		INT BY A.M.(TIME2)	9D~~63 : -99~~99		03,09
OSCILLATOR 1 LFO 2					

252	:	Same as OSCILLATOR 1 LFO 1 (242~~251)	:	04,00
261	:	(10 Bytes)	:	04,0C
+-----+				
OSCILLATOR 1 PITCH				
+-----+				
262	OCTAVE	FE~~01 : 32~~4 [']		05,00
+-----+				
263	TRANSPOSE	F4~~0C : -12~~12		05,01
+-----+				
264	TUNE (MSB)	FB50~~04B0 : -1200~~1200		05,02
265	TUNE (LSB)	[Cent]		
+-----+				
266	A.M.SOURCE (PITCH)	00~~2A : **1-4	Alternate Modulation	05,03
+-----+				
267	INT BY A.M.(PITCH)	8D~~73 : **1-7		05,04
+-----+				
268	PITCH SLOPE	F6~~14 : -1.0~~2.0		05,05
+-----+				
269	INT BY PITCH EG	8D~~73 : **1-7		05,06
+-----+				
270	A.M.SOURCE (P.EG)	00~~2A : **1-4	Alternate Modulation	05,07
+-----+				
271	INT BY A.M.(P.EG)	8D~~73 : **1-7		05,08
+-----+				
272	INT BY OSC-1 LFO 1	8D~~73 : **1-7		05,09
+-----+				
273	INT BY OSC-1 LFO 2	8D~~73 : **1-7		05,0A
+-----+				
bit0	PORTAMENTO	0:DIS, 1:ENA		05,0B
+-----+				
bit1	PORTAMENTO FINGERED	0:OFF, 1:ON		05,0C
+-----+				
275	PORTAMENTO TIME	00~~7F : 00~~127		05,0D
+-----+				
276	PITCH BY JS(+X)	C4~~0C : -60~~12		05,0E
+-----+				
277	PITCH BY JS(-X)	C4~~0C : -60~~12		05,0F
+-----+				
278	PITCH BY RIBBON(X)	F4~~0C : -12~~12		05,10
+-----+				
279	(RESERVED)			----
+-----+				
280	LFO1 INT BY JS(+Y)	8D~~73 : **1-7		05,11
+-----+				
281	LFO2 INT BY JS(+Y)	8D~~73 : **1-7		05,12
+-----+				
282	A.M.SOURCE(LFO1INT)	00~~2A : **1-4	Alternate Modulation	05,13
+-----+				
283	INT BY A.M.(LFO1INT)	8D~~73 : **1-7		05,14
+-----+				
284	A.M.SOURCE(LFO2INT)	00~~2A : **1-4	Alternate Modulation	05,15
+-----+				
285	INT BY A.M.(LFO2INT)	8D~~73 : **1-7		05,16
+-----+				
OSCILLATOR 1 FILTER				
+-----+				
286	TYPE	0:LPF+RESO, 1:LPF+HPF		06,00
+-----+				
287	TRIM	00~~63 : 00~~99		06,01
+-----+				
288	RESONANCE	00~~63 : 00~~99		06,02
+-----+				
289	A.M.SOURCE(RESO.)	00~~2A : **1-4	Alternate Modulation	06,03
+-----+				
290	INT BY A.M.(RESO.)	9D~~63 : -99~~99		06,04
+-----+				
291	A.M.SOURCE(EG)	00~~2A : **1-4	Alternate Modulation	06,05

292	A.M.SOURCE(LFO1)	00~~2A :	**1-4	Alternate Modulation	06,06
293	A.M.SOURCE(LFO2)	00~~2A :	**1-4	Alternate Modulation	06,07
OSCILLATOR 1 FILTER A					
294	FREQUENCY	00~~63 :	00~~99		07,00
295	KBD TRACK INTENSITY	9D~~63 :	-99~~99		07,01
296	A.M.SOURCE(MOD1)	00~~2A :	**1-4	Alternate Modulation	07,02
297	INT BY A.M.(MOD1)	9D~~63 :	-99~~99		07,03
298	A.M.SOURCE(MOD2)	00~~2A :	**1-4	Alternate Modulation	07,04
299	INT BY A.M.(MOD2)	9D~~63 :	-99~~99		07,05
300	EG INTENSITY	9D~~63 :	-99~~99		07,06
301	EG VELOCITY	9D~~63 :	-99~~99		07,07
302	INT BY LFO 1	9D~~63 :	-99~~99		07,08
303	INT BY LFO 2	9D~~63 :	-99~~99		07,09
304	LFO 1 BY JS(-Y)	9D~~63 :	-99~~99		07,0A
305	LFO 2 BY JS(-Y)	9D~~63 :	-99~~99		07,0B
306	INT BY A.M.(EG)	9D~~63 :	-99~~99	Alternate Modulation	07,0C
307	INT BY A.M.(LFO1)	9D~~63 :	-99~~99	Alternate Modulation	07,0D
308	INT BY A.M.(LFO2)	9D~~63 :	-99~~99	Alternate Modulation	07,0E
OSCILLATOR 1 FILTER B					
309					08,00
:	Same as OSCILLATOR 1 FILTER B (294~~308)				:
323	(15 Bytes)				08,0E
OSCILLATOR 1 FILTER EG					
324	START LEVEL	9D~~63 :	-99~~99		09,00
325	ATTACK TIME	00~~63 :	00~~99		09,01
326	ATTACK LEVEL	9D~~63 :	-99~~99		09,02
327	DECAY TIME	00~~63 :	00~~99		09,03
328	BREAK POINT LEVEL	9D~~63 :	-99~~99		09,04
329	SLOPE TIME	00~~63 :	00~~99		09,05
330	SUSTAIN LEVEL	9D~~63 :	-99~~99		09,06
331	RELEASE TIME	00~~63 :	00~~99		09,07
332	RELEASE LEVEL	9D~~63 :	-99~~99		09,08
b7~~b6	RELEASE (A.M.TIME1)	FF:-, 0:OFF, 1:+			09,12
b5~~b4	SLOPE (A.M.TIME1)	FF:-, 0:OFF, 1:+			09,11
b3~~b2	DECAY (A.M.TIME1)	FF:-, 0:OFF, 1:+			09,10

	b1~~b0	ATTACK (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,0F
	b7~~b6	RELEASE (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,16
	b5~~b4	SLOPE (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,15
334	b3~~b2	DECAY (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,14
	b1~~b0	ATTACK (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,13
	b5~~b4	BREAK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,19
335	b3~~b2	ATTACK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,18
	b1~~b0	START (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,17
336		A.M.SOURCE(TIME1)	00~~2A : **1-4	Alternate Modulation	09,09
337		INT BY A.M.(TIME1)	9D~~63 : -99~~99		09,0A
338		A.M.SOURCE(TIME2)	00~~2A : **1-4	Alternate Modulation	09,0B
339		INT BY A.M.(TIME2)	9D~~63 : -99~~99		09,0C
340		A.M.SOURCE(LEVEL)	00~~2A : **1-4	Alternate Modulation	09,0D
241		INT BY A.M.(LEVEL)	9D~~63 : -99~~99		09,0E
OSCILLATOR 1 FILTER KEYBOARD TRACK					
342		KEY LOW	00~~7F : C-1~~G9		0A,00
343		RAMP LOW	9D~~63 : -99~~99		0A,01
344		KEY HIGH	00~~7F : C-1~~G9		0A,02
345		RAMP HIGH	9D~~63 : -99~~99		0A,03
OSCILLATOR 1 AMPLIFIER					
346		LEVEL	00~~7F : 00~~127		0B,00
347		INT BY VELOCITY	9D~~63 : -99~~99		0B,01
348		A.M.SOURCE	00~~2A : **1-4	Alternate Modulation	0B,02
349		INT BY A.M.	9D~~63 : -99~~99		0B,03
350		INT BY LFO 1	9D~~63 : -99~~99		0B,04
351		INT BY LFO 2	9D~~63 : -99~~99		0B,05
352		A.M.SOURCE(LFO1)	00~~2A : **1-4	Alternate Modulation	0B,06
353		INT BY A.M.(LFO1)	9D~~63 : -99~~99		0B,07
354		A.M.SOURCE(LFO2)	00~~2A : **1-4	Alternate Modulation	0B,08
355		INT BY A.M.(LFO2)	9D~~63 : -99~~99		0B,09
OSCILLATOR 1 AMPLIFIER EG					
356		START LEVEL	00~~63 : 00~~99		0C,00
357		ATTACK TIME	00~~63 : 00~~99		0C,01
358		ATTACK LEVEL	00~~63 : 00~~99		0C,02
359		DECAY TIME	00~~63 : 00~~99		0C,03

360	BREAK POINT LEVEL	00~~63 : 00~~99		0C,04
361	SLOPE TIME	00~~63 : 00~~99		0C,05
362	SUSTAIN LEVEL	00~~63 : 00~~99		0C,06
363	RELEASE TIME	00~~63 : 00~~99		0C,07
364	A.M.SOURCE(TIME1)	00~~2A : **1-4	Alternate Modulation	0C,08
365	INT BY A.M.(TIME1)	9D~~63 : -99~~99		0C,09
366	A.M.SOURCE(TIME2)	00~~2A : **1-4	Alternate Modulation	0C,0A
367	INT BY A.M.(TIME2)	9D~~63 : -99~~99		0C,0B
368	A.M.SOURCE(LEVEL)	00~~2A : **1-4	Alternate Modulation	0C,0C
369	INT BY A.M.(LEVEL)	9D~~63 : -99~~99		0C,0D
370	b0~~1 ATTACK (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,0E
	b2~~3 DECAY (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,0F
	b4~~5 SLOPE (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,10
	b6~~7 RELEASE (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,11
371	b0~~1 ATTACK (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,12
	b2~~3 DECAY (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,13
	b4~~5 SLOPE (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,14
	b6~~7 RELEASE (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,15
372	b0~~1 START (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,16
	b2~~3 ATTACK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,17
	b4~~5 BREAK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,18
273	(RESERVED)			----
OSCILLATOR 1 AMPLIFIER KEYBOARD TRACK				
374	KEY LOW	00~~7F : C-1~~G9		0D,00
375	RAMP LOW	9D~~63 : -99~~99		0D,01
376	KEY HIGH	00~~7F : C-1~~G9		0D,02
377	RAMP HIGH	9D~~63 : -99~~99		0D,03
OSCILLATOR 1 OUTPUT				
278	(RESERVED)			----
379	PAN	00:RND, 01~~7F : L001~~R127		0E,00
380	A.M.SOURCE(PAN)	00~~2A : **1-4	Alternate Modulation	0E,01
381	INT BY A.M.(PAN)	9D~~63 : -99~~99		0E,02
382	SEND1 (TO MFX1)	00~~7F: 00~~127		0E,03
383	SEND2 (TO MFX2)	00~~7F: 00~~127		0E,04

OSCILLATOR 2			
384			0F,00
:	Same as OSCILLATOR 1 (230~~383)		:
537	(154 Bytes)		1B,0E
538			
:	(RESERVED)		----
539			

**1-1 : 0 : Equal Temperament 1 : Pure Major 2 : Pure Minor
 3 : Arabic 4 : Pythagoras 5 : Werkmeister
 6 : Kirnberger 7 : Slendro 8 : Pelog
 9 : Stretch A : User All Notes Scale
 B~~1A : User Octave Scale 00 ~~15

**1-2 : 0 : OFF 1 : SW 1/2 Mod:CC#80/CC#81 2 : Porta SW 3 : Octave Down
 4 : Octave Up 5 : JS X Lock 6 : JS+Y Lock 7 : JS-Y Lock
 8 : Ribbon Lock 9 : JS X & Ribbon Lock A : JS+Y & Ribbon Lock B : JS-Y & Ribbon
 Lock
 C : After Touch Lock

**1-3 : 0 : Off 1 : Knob Mod.1:CC#17 2 : Knob Mod.2:CC#19 3 : Knob
 Mod.3:CC#20
 4 : Knob Mod.4:CC#21 5 : Master Volume 6 : Portamento Time:CC#05 7 :
 Volume:CC#07
 8 : Post IFX Pan:CC#08 9 : Pan:CC#10 A : Expression:CC#11 B : FX
 Control 1:CC#12
 C : FX Control 2:CC#13 D : LPF Cutoff:CC#74 E : Resonance/HPF:CC#71 F : Filter
 EG Int.:CC#79
 10 : F/A Attack:CC#73 11 : F/A Decay:CC#75 12 : F/A Sustain:CC#70 13 : F/A
 Release:CC#72
 14 : Pitch LFO1 Spd:CC#76 15 : Pitch LFO1 Dep:CC#77 16 : Pitch LFO1 Dly:CC#78 17 : SW 1
 Mod.:CC#80
 18 : SW 2 Mod.:CC#81 19 : Foot Switch:CC#82 1A : MIDI CC#83 1B : MFX Send
 1:CC#93
 1C : MFX Send 2:CC#91 1D~~7C : MIDI CC#00~~MIDI CC#95

**1-4 : 0 : Off 1 : Pitch EG 2 : Filter EG 3 : Amp EG
 4 : LFO 1 5 : LFO 2 6 : Flt KTrk +/- 7 : Flt KTrk +/-
 8 : Flt KTrk 0/+ 9 : Flt KTrk +/-0 A : Amp KTrk +/- B : Amp KTrk +/-
 C : Amp KTrk 0/+ D : Amp KTrk +/-0 E : Note Number F : Velocity
 10 : Poly After 11 : After Touch 12 : JS X 13 : JS+Y:CC#01
 14 : JS-Y:CC#02 15 : JS+Y & AT/2 16 : JS-Y & AT/2 17 : Pedal:CC#04
 18 : Ribbon:CC#16 19 : Slider:CC#18 1A : KnobMod1:#17 1B : KnobMod2:#19
 1C : KnobMod3:#20 1D : KnobMod4:#21 1E : KnobMod1 [+] 1F : KnobMod2 [+]
 20 : KnobMod3 [+] 21 : KnobMod4 [+] 22 : Damper:#64 23 : Porta.SW:#65
 24 : Sostenuto:#66 25 : Soft:CC#67 26 : SW 1:CC#80 27 : SW 2:CC#81
 28 : Foot SW:#82 29 : MIDI:CC#83 2A : Tempo

**1-5 : Data Time[mSec] Step
 00~~19 : 00~~ 50 (2mSec)
 1A~~28 : 60~~ 200 (10mSec)
 29~~38 : 250~~1000 (50mSec)
 39~~60 : 1100~~5000 (100mSec)
 61 : KeyOff

**1-6 : 0 : Triangle 0 1 : Triangle 90 2 : Triangle Random 3 : Saw 0
 4 : Saw 180 5 : Square 6 : Sine 7 : Guitar
 8 : Exponential Triangle 9 : Exponential Saw Down A : Exponential Saw Up B : Step Triangle-
 4
 C : Step Triangle-6 D : Step Saw-4 E : Step Saw-6 F : Random1 (S/H)
 10 : Random2 (S/H) 11 : Random3 (S/H) 12 : Random4 (Vector) 13 : Random5 (Vec-
 tor)
 14 : Random6 (Vector)

**1-7 : 8D~~C3 : -12.00~~ -1.20 (0.20 Step)
 C4~~CD : -1.00~~ -0.55 (0.05 Step)

CE~~32 : -0.50~~ +0.50 (0.01 Step)
 33~~3C : +0.55~~ +1.00 (0.05 Step)
 3D~~73 : +1.20~~+12.00 (0.20 Step)

****1-8 : Arpeggio Pattern No. Format**

PATTERN NO.MSB(No.195 bit5) : N
 PATTERN NO.(No.194) : nnnnnnnn
 Nnnnnnnnn = 0~~1FF : 0~~511

****1-9 : When OSCILLATOR MODE is Drums,**

00~~3F : Drum Kit 00 ~~ 63
 40~~48 : Drum Kit 144 ~~ 152 (GM)
 49~~98 : Drum Kit 64 ~~ 143

[TABLE 2-1] MOSS PROGRAM PARAMETERS (for Optional EXB-MOSS)

No. : No. in the PROGRAM DUMP DATA.

PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE.

Left side of ',' is Parameter ID, and right side is SUB ID.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00	PROGRAM NAME (Head)			
:	:	20~~7F		----
15	PROGRAM NAME (Tail)			
INSERT EFFECT PARAMETERS				
16				1E,00
:	Same as PROGRAM [TABLE 1] INSERT EFFECT (16~~135)			:
135	(120 Bytes)			4D,??
MASTER EFFECT PARAMETERS				
136				24,00
:	Same as PROGRAM [TABLE 1] MASTER EFFECT (136~~191)			:
191	(56 Bytes)			4E,??
ARPEGGIATOR PARAMETERS				
192				4B,00
:	Same as PROGRAM [TABLE 1] ARPEGGIATOR (192~~213)			:
203	(12 Bytes)			4C,0D
COMMON PARAMETERS				
b0~~1	(OSCILLATOR MODE)	3	3 Fixed (Means MOSS)	-----
b2~~3	VOICE ASSIGN	0:Mono Multi, 1:Mono Single, 2:Poly		28,03
204	b4~~5	KEY PRIORITY	0:Low, 1:High, 2:Last	Available when MONO
	bit6	(Ignore)		
	bit7	HOLD	0:OFF, 1:ON	28,01
205	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off		28,09
206	CATEGORY	00~~0F : 01~~16		28,00
207	SCALE TYPE	00~~1A : **1-1		28,0A
208	SCALE KEY	00~~0B : C ~~ B		28,0B
209	RANDOM INTENSITY	00~~63 : 0~~99		28,0C
210	SW 1			
b0~~5	ASSIGN	00~~0C : **1-2		28,0D

	bit6	MODE	0:Toggle, 1:Momentary		28,11
	bit7	SW	0:OFF, 1:ON		28,0E
211		SW 2 (Same as SW 1 (210))			28,10~12
	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		28,13
212	bit7	REALTIME CONTROLS	0:A, 1:B		28,17
213		KNOB 2 ASSIGN	00~~7C : **1-3		28,14
214		KNOB 3 ASSIGN	00~~7C : **1-3		28,15
215		KNOB 4 ASSIGN	00~~7C : **1-3		28,16
RETRIGGER CONTROL					
216		RETRIGGER CONTROLLER	00,0B~~29 : *2-1		28,04
217		THRESHOLD VELOCITY	01~~7F : 1~~127		28,05
UNISON					
	b0~~1	UNISON TYPE	0:OFF, 1:2voices, 2:3voices, 3:6voices		28,06
218	bit2	(UNISON SW)	1	1 Fixed (Means Enable)	----
	bit3	UNISON MODE	0:Fixed, 1:Dynamic		28,07
219		UNISON DETUNE	00~~63 : 0~~99		28,08
EG1					
220		START LEVEL	9D~~63 : -99~~99		36,00
221		ATTACK TIME	00~~63 : 0~~99		36,01
222		ATTACK LEVEL	9D~~63 : -99~~99		36,02
223		DECAY TIME	00~~63 : 0~~99		36,03
224		BREAK LEVEL	9D~~63 : -99~~99		36,04
225		SLOPE TIME	00~~63 : 0~~99		36,05
226		SUSTAIN LEVEL	9D~~63 : -99~~99		36,06
227		RELEASE TIME	00~~63 : 0~~99		36,07
228		RELEASE LEVEL	9D~~63 : -99~~99		36,08
229		LEVEL AMS	00~~29 : *2-1	Alternate Modulation	36,09
230		INTENSITY	9D~~63 : -99~~99		36,0A
231		VELOCITY CONTROL	9D~~63 : -99~~99		36,0B
232		TIME AMS 1	00~~29 : *2-1	Alternate Modulation	36,0C
233		INTENSITY	9D~~63 : -99~~99		36,0D
234		TIME AMS 2	00~~29 : *2-1	Alternate Modulation	36,0E
235		ATTACK INTENSITY	9D~~63 : -99~~99		36,0F
236		DECAY INTENSITY	9D~~63 : -99~~99		36,10

237	SLOPE INTENSITY	9D~~63 : -99~~99		36,11
238	RELEASE INTENSITY	9D~~63 : -99~~99		36,12
EG 2 ~~ 4				
239	:	EG 2 (Same as EG 1 (220 ~~ 238))	See above 18	
257	(19 Bytes)		parameters.	
			ParamID = 37	
258	:	EG 3 (Same as EG 1 (220 ~~ 238))	See above 18	
276	(19 Bytes)		parameters.	
			ParamID = 38	
277	:	EG 4 (Same as EG 1 (220 ~~ 238))	See above 18	
295	(19 Bytes)		parameters.	
			ParamID = 39	
LFO 1				
b0~~5	WAVEFORM	00:Triangle 0, 01:Triangle 90, 02:Triangle Random, 03:Sine, 04:Saw Up 0, 05:Saw Up 180, 06:Saw Down 0, 07:Saw Down 180, 08:Square, 09:Random-S/H, 0A:Random-Vector, 0B:Step Triangle-4, 0C:Step Triangle-6, 0D:Step Saw-4, 0E:Step Saw-6, 0F:Exponential Triangle, 10:Exponential Saw Up, 11:Exponential Saw Down	3A,00	
296	b6~~7	KEY SYNC.	0:Off, 1:byTimbre, 2:byVoice	3A,01
297	FREQUENCY	00~~C7 : 0~~199		3A,02
298	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	3A,03
299	INTENSITY	9D~~63 : -99~~99		3A,04
300	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	3A,05
301	INTENSITY	9D~~63 : -99~~99		3A,06
302	FADE IN	00~~63 : 0~~99		3A,07
303	AMPLITUDE AMS	00~~29 : *2-1	Alternate Modulation	3A,08
304	INTENSITY	9D~~63 : -99~~99		3A,09
305	OFFSET	CE~~32 : -50~~50		3A,0A
b0~~3	MIDI/TEMPO SYNC. TIMES	00~~0F : 1~~16		3A,0D
306	b4~~6	BASE NOTE	0:16,1:8T,2:8,3:4T,4:4,5:2T,6:2,7:1	3A,0C
bit7	SYNC. SW	0:OFF, 1:ON		3A,0B
LFO 2 ~~ 4				
307	:	LFO 2 (Same as LFO 1 (296 ~~ 306))	See above 14	
317	(11 Bytes)		parameters.	
			ParamID = 3B	
318	:	LFO 3 (Same as LFO 1 (296 ~~ 306))	See above 14	
328	(11 Bytes)		parameters.	
			ParamID = 3C	
329	:	LFO 4 (Same as LFO 1 (296 ~~ 306))	See above 14	
339	(11 Bytes)		parameters.	
			ParamID = 3D	

OSC COMMON PITCH MODULATION				
340	JS(+X) INTENSITY	C4~~18 : -60~~24		29,04
341	JS(-X) INTENSITY	C4~~18 : -60~~24		29,05
342	PITCH BEND STEP b0~~3 JS(+X)	00:Continuous, 01:1/8, 02:1/4, 03:1/2, 05~~0F:01~~12		29,06
	b4~~7 JS(-X)			29,07
343	COMMON PITCH AMS	00~~29 : *2-1	Alternate Modulation	29,02
344	INTENSITY	9D~~63 : -99~~99		29,03
PORTAMENTO				
345	bit0 ENABLE SW	0:OFF, 1:ON		29,08
	bit1 FINGERED MODE SW	0:OFF, 1:ON		29,09
346	PORTAMENTO TIME	00~~63 : 0~~99		29,0A
347	TIME AMS	00~~29 : *2-1	Alternate Modulation	29,0B
348	INTENSITY	9D~~63 : -99~~99		29,0C
OSC 1				
349	OSC TYPE	(Single Size) 00:Standard, 01:Comb Filter, 02:VPM, 03:Resonance, 04:Ring Mod, 05:Cross Mod, 06:Sync Mod, 07:Organ Model, 08:E.Piano Model, (Double Size) 09:Brass Model, 0A:Reed Model, 0B:Plucked String Model, 0C:Bowed String Model		29,00
350	OCTAVE	00:-2[32'], 01:-1[16'], 02:0[8'], 03:1[4']		2A,00
351	TRANPOSE	F4~~0C : -12~~12		2A,01
352	TUNE	CE~~32 : -50~~50 [cent]		2A,02
353	FREQUENCY OFFSET	9C~~64 : -10.0~~10.0 [Hz]		2A,03
354	PITCH SLOPE CENTER KEY	00~~7F : C-1~~G9		2A,04
355	RAMP LOW	CE~~64 : -1.00~~2.00	0.01 by step.	2A,05
356	RAMP HIGH	CE~~64 : -1.00~~2.00		2A,06
357	PITCH AMS 1	00~~29 : *2-1	Alternate Modulation	2A,07
358	INTENSITY	9D~~63 : -99~~99		2A,08
359	AMS 1 INTENSITY AMS	00~~29 : *2-1	Alternate Modulation	2A,09
360	INTENSITY	9D~~63 : -99~~99		2A,0A
361	PITCH AMS 2	00~~29 : *2-1	Alternate Modulation	2A,0B
362	INTENSITY	9D~~63 : -99~~99		2A,0C
363 : 400	OSC SET 38 bytes (Parameters are determined by OSC TYPE. See [Table 2-2].)			
OSC 2				
401	OSC TYPE	(SingleSize Only) 00:Standard, 01:Comb Filter, 02:VPM,		29,01

		03:Resonance, 04:Ring Mod, 05:Cross Mod, 06:Sync Mod, 07:Organ Model, 08:E.Piano Model		
402	OSC 2		See above 51	
:	(Much the same as OSC 1 (350 ~~ 400), except OSC TYPE.)		parameters.	
452	(51 Bytes)		ParamID = 2B	
SUB OSC				
453	OCTAVE	00:-2[32'], 01:-1[16'], 02:0[8'], 03:1[4']	2C,00	
454	TRANPOSE	F4~~0C : -12~~12	2C,01	
455	TUNE	CE~~32 : -50~~50 [cent]	2C,02	
456	FREQUENCY OFFSET	9C~~64 : -10.0~~10.0 [Hz]	2C,03	
457	PITCH SLOPE CENTER KEY	00~~7F : C-1~~G9	2C,04	
458	RAMP LOW	CE~~64 : -1.00~~2.00	2C,05	
459	RAMP HIGH	CE~~64 : -1.00~~2.00	2C,06	0.01 by step.
460	PITCH AMS 1	00~~29 : *2-1	2C,07	Alternate Modulation
461	INTENSITY	9D~~63 : -99~~99	2C,08	
462	AMS 1 INTENSITY AMS	00~~29 : *2-1	2C,09	Alternate Modulation
463	INTENSITY	9D~~63 : -99~~99	2C,0A	
464	PITCH AMS 2	00~~29 : *2-1	2C,0B	Alternate Modulation
465	INTENSITY	9D~~63 : -99~~99	2C,0C	
466	WAVEFORM	0:Saw, 1:Square, 2:Triangle, 3:Sine	2D,00	
NOISE GENERATOR				
467	NOISE FILTER TYPE	0:THRU, 1:LPF, 2:HPF, 3:BPF	2D,01	
468	FILTER INPUT TRIM	00~~63 : 00~~99	2D,02	
469	FILTER FREQUENCY	00~~63 : 00~~99	2D,03	
470	FREQUENCY AMS 1	00~~29 : *2-1	2D,04	Alternate Modulation
471	INTENSITY	9D~~63 : -99~~99	2D,05	
472	FREQUENCY AMS 2	00~~29 : *2-1	2D,06	Alternate Modulation
473	INTENSITY	9D~~63 : -99~~99	2D,07	
474	FILTER RESONANCE	00~~63 : 00~~99	2D,08	
OSC MIXER				
475	OSC 1 -> Mixer1 LEVEL	00~~63 : 00~~99	2E,00	
476	LEVEL AMS	00~~29 : *2-1	2E,01	Alternate Modulation
477	INTENSITY	9D~~63 : -99~~99	2E,02	
478				See above 3
:	OSC 1 -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	parameters.	
480			SUB ID = 03~~05	

481 : 483	OSC 2 -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 06~~08
484 : 486	OSC 2 -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 09~~0B
487 : 489	SUB OSC -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 0C~~0E
490 : 492	SUB OSC -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 0F~~11
493 : 495	Noise -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 12~~14
496 : 498	Noise -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 15~~17
499 : 501	Feedback -> Mixer1	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 18~~1A
502 : 504	Feedback -> Mixer2	(Same as OSC 1 -> Mixer1 (475 ~~ 477))	See above 3 parameters. SUB ID = 1B~~1D
+-----+-----+-----+-----+			
505	(INPUT SW)		
	bit0 OSC 1	1	1 Fixed (Means Enable) -----
	bit1 OSC 2	1	1 Fixed (Means Enable) -----
	bit2 SUB OSC	1	1 Fixed (Means Enable) -----
	bit3 Noise	1	1 Fixed (Means Enable) -----
+-----+-----+-----+-----+			
FILTER ROUTING			
506	b0~~1 ROUTING	0:Serial 1, 1:Serial 2, 2:Parallel	2F,00
	bit2 LINK SW	0:OFF, 1:ON	2F,01
+-----+-----+-----+-----+			
FILTER 1			
507	FILTER TYPE	0:LPF(A), 1:HPF(A), 2:BPF(A), 3:BRF(A), 4:DualBP(A/B)	30,00
508	INPUT TRIM	00~~63 : 00~~99	30,01
509	FILTER FREQUENCY	00~~63 : 00~~99	30,02
510	FREQUENCY KBD TRACK		
	KEY LOW	00~~7F : C-1~~G9	30,03
511	KEY HIGH	00~~7F : C-1~~G9	30,04
512	RAMP LOW	9D~~63 : -99~~99	30,05
513	RAMP HIGH	9D~~63 : -99~~99	30,06
514	FREQUENCY MOD. EG	00~~04 : EG1~~4, AmpEG	Alternate Modulation 30,07
515	INTENSITY	9D~~63 : -99~~99	30,08

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516	FILTER AMS 1	00~~29 : *2-1	Alternate Modulation	30,09
517	INTENSITY	9D~~63 : -99~~99		30,0A
518	FILTER AMS 2	00~~29 : *2-1	Alternate Modulation	30,0B
519	INTENSITY	9D~~63 : -99~~99		30,0C
520	FILTER RESONANCE	00~~63 : 00~~99		30,0D
521	RESONANCE AMS	00~~29 : *2-1	Alternate Modulation	30,0E
522	INTENSITY	9D~~63 : -99~~99		30,0F
523	B:INPUT TRIM	00~~63 : 00~~99		32,00
524	B:FILTER FREQUENCY	00~~63 : 00~~99		32,01
525	B:FREQ. KBD TRACK KEY LOW	00~~7F : C-1~~G9		32,02
526	KEY HIGH	00~~7F : C-1~~G9		32,03
527	RAMP LOW	9D~~63 : -99~~99		32,04
528	RAMP HIGH	9D~~63 : -99~~99		32,05
529	B:FREQ. EG INTENSITY	9D~~63 : -99~~99	Alternate Modulation	32,06
530	B:FREQ. AMS 1 INT.	9D~~63 : -99~~99	Alternate Modulation	32,07
531	B:FREQ. AMS 2 INT.	9D~~63 : -99~~99	Alternate Modulation	32,08
532	B:FILTER RESONANCE	00~~63 : 00~~99		32,09
533	B:RESONANCE INT.	9D~~63 : -99~~99	Alternate Modulation	32,0a
534	: FILTER 2 (Same as FILTER 1 (507 ~~ 533)) (27 Bytes)		See above 27 parameters.	
560			ParamID = 31 or (B:) 33	
AMPLIFIER 1				
561	AMP LEVEL	00~~63 : 00~~99		34,00
562	KEYBOARD TRACK KEY LOW	00~~7F : C-1~~G9		34,01
563	KEY HIGH	00~~7F : C-1~~G9		34,02
564	RAMP LOW	9D~~63 : -99~~99		34,03
565	RAMP HIGH	9D~~63 : -99~~99		34,04
566	MOD.EG	00~~04 : EG1~~4, AmpEG		34,05
567	(Reserved)	99	99 Fixed	----
568	AMS	00~~29 : *2-1	Alternate Modulation	34,06
569	INTENSITY	9D~~63 : -99~~99		34,07
570	: AMPLIFIER 2 (Same as AMPLIFIER 1 (561 ~~ 569)) (9 Bytes)		See above 8 parameters.	
578			PARA No. :34,08~~34,0F	
AMP EG				
579	(Reserved)	0	0 Fixed	----

580	ATTACK TIME	00~~63 : 0~~99		35,00
581	ATTACK LEVEL	00~~63 : 0~~99		35,01
582	DECAY TIME	00~~63 : 0~~99		35,02
583	BREAK LEVEL	00~~63 : 0~~99		35,03
584	SLOPE TIME	00~~63 : 0~~99		35,04
585	SUSTAIN LEVEL	00~~63 : 0~~99		35,05
586	RELEASE TIME	00~~63 : 0~~99		35,06
587	(Reserved)	0	0 Fixed	----
588	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	35,07
589	INTENSITY	9D~~63 : -99~~99		35,08
590	VELOCITY CONTROL	9D~~63 : -99~~99		35,09
591	TIME AMS 1	00~~29 : *2-1	Alternate Modulation	35,0A
592	INTENSITY	9D~~63 : -99~~99		35,0B
593	TIME AMS 2	00~~29 : *2-1	Alternate Modulation	35,0C
594	ATTACK INTENSITY	9D~~63 : -99~~99		35,0D
595	DECAY INTENSITY	9D~~63 : -99~~99		35,0E
596	SLOPE INTENSITY	9D~~63 : -99~~99		35,0F
597	RELEASE INTENSITY	9D~~63 : -99~~99		35,10
OUTPUT LEVEL/PAN				
598	PAN	00~~7F : L000~~R127		34,10
599	PAN AMS	00~~29 : *2-1	Alternate Modulation	34,11
600	INTENSITY	9D~~63 : -99~~99		34,12
601	OUTPUT LEVEL	00~~7F : 0~~127		34,13
602	SEND 1	00~~7F : 0~~127		34,14
603	SEND 2	00~~7F : 0~~127		34,15

[TABLE 2-2] MULTI OSCILLATOR PARAMETERS (for Optional EXB-MOSS)

1999.05.11

No. : No. in the OSC SET (38 bytes).

SUB ID : Right side of '/' is SUB ID for OSC 2.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	SUB ID
MULTI OSCILLATOR PARAMETERS 38 Bytes				
0:Standard			ParamID = 3E	
00	WAVE	0:Saw, 1:Pulse		00/16
01	WAVE EDGE	00~~63 : 0~~99		01/17

02	LEVEL	00~~63 : 0~~99		02/18
03	TRIANGLE LEVEL	00~~63 : 0~~99		03/19
04	SINE LEVEL	00~~63 : 0~~99		04/1A
05	PHASE SHIFT	9D~~63 : -99~~99		05/1B
06	WAVEFORM WAVEFORM	9D~~63 : -99~~99		06/1C
07	MOD. LFO	00~~03 : LFO 1 ~~ 4	Alternate Modulation	07/1D
08	INTENSITY	9D~~63 : -99~~99		08/1E
09	AMS	00~~29 : *2-1	Alternate Modulation	09/1F
10	INTENSITY	9D~~63 : -99~~99		0A/20
11	WAVE SHAPE INPUT LEVEL	00~~63 : 0~~99		0B/21
12	INPUT LEVEL AMS	00~~29 : *2-1	Alternate Modulation	0C/22
13	INTENSITY	9D~~63 : -99~~99		0D/23
14	OFFSET	9D~~63 : -99~~99		0E/24
15	TYPE	0:Clip, 1:Reso		0F/25
16	SHAPE	00~~63 : 0~~99		10/26
17	SHAPE AMS	00~~29 : *2-1	Alternate Modulation	11/27
18	INTENSITY	9D~~63 : -99~~99		12/28
19	BALANCE	00~~63 : 0~~99		13/29
20	BALANCE AMS	00~~29 : *2-1	Alternate Modulation	14/2A
21	INTENSITY	9D~~63 : -99~~99		15/2B
22~~37	(Reserved)	0	0 Fixed	----
1:Comb Filter			ParamID = 3F	
00	INPUT INPUT WAVE	0:OSC2(1)+Noise, 1:Sub OSC+Noise, 2:Filter1+Noise, 3:Filter2+Noise, 4:Pulse Noise, 5:Impulse		00/0E
01	INPUT WAVE LEVEL	00~~63 : 0~~99		01/0F
02	NOISE LEVEL	00~~63 : 0~~99		02/10
03	PULSE WIDTH	00~~63 : 0~~99		03/11
04	INPUT LEVEL AMS	00~~29 : *2-1	Alternate Modulation	04/12
05	INTENSITY	9D~~63 : -99~~99		05/13
06	FEEDBACK FEEDBACK	00~~63 : 0~~99		06/14
07	AMS 1	00~~29 : *2-1	Alternate Modulation	07/15
08	INTENSITY	9D~~63 : -99~~99		08/16
09	AMS 2	00~~29 : *2-1	Alternate Modulation	09/17

10	INTENSITY	9D~~63 : -99~~99		0A/18
11	HIGH DAMP HIGH DAMP	00~~63 : 0~~99		0B/19
12	AMS	00~~29 : *2-1	Alternate Modulation	0C/1A
13	INTENSITY	9D~~63 : -99~~99		0D/1B
14~~37	(Reserved)	0	0 Fixed	-----
2:VPM		ParamID = 40		
00	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		00/19
01	WAVE LEVEL	00~~63 : 0~~99		01/1A
02	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	02/1B
03	INTENSITY	9D~~63 : -99~~99		03/1C
04	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	04/1D
05	INTENSITY	9D~~63 : -99~~99		05/1E
06	WAVE SHAPE	00~~63 : 0~~99		06/1F
07	SHAPE AMS 1	00~~29 : *2-1	Alternate Modulation	07/20
08	INTENSITY	9D~~63 : -99~~99		08/21
09	SHAPE AMS 2	00~~29 : *2-1	Alternate Modulation	09/22
10	INTENSITY	9D~~63 : -99~~99		0A/23
11	WAVE SHAPE TYPE	00~~01 : 1~~2		0B/24
12	FEEDBACK	00~~63 : 0~~99		0C/25
13	MODULATOR FREQUENCY COARSE	00~~10 : 0.5~~16		0D/26
14	FREQUENCY FINE	CE~~32 : -50~~50		0E/27
15	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	0F/28
16	INTENSITY	9D~~63 : -99~~99		10/29
17	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	11/2A
18	INTENSITY	9D~~63 : -99~~99		12/2B
19	WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine 4:OSC2(1), 5:Sub OSC, 6:Filter1, 7:Filter2		13/2C
20	WAVE LEVEL	00~~63 : 0~~99		14/2D
21	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	15/2E
22	INTENSITY	9D~~63 : -99~~99		16/2F
23	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	17/30
24	INTENSITY	9D~~63 : -99~~99		18/31
25~~37	(Reserved)	0	0 Fixed	-----

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3:Resonance		ParamID = 41		
00	INPUT INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/20
01	INPUT WAVE LEVEL	00~~63 : 0~~99		01/21
02	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	02/22
03	INTENSITY	9D~~63 : -99~~99		03/23
04	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	04/24
05	INTENSITY	9D~~63 : -99~~99		05/25
06	BPF 1 RESONANCE	00~~63 : 0~~99		06/26
07	FREQUENCY COARSE	00~~0F : 01~~16		07/27
08	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	08/28
09	INTENSITY	F1~~0F : -15~~15		09/29
10	FREQUENCY FINE	9D~~63 : -99~~99		0A/2A
11	LEVEL	00~~63 : 0~~99		0B/2B
12	BPF 2 RESONANCE	00~~63 : 0~~99		0C/2C
13	FREQUENCY COARSE	00~~0F : 01~~16		0D/2D
14	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	0E/2E
15	INTENSITY	F1~~0F : -15~~15		0F/2F
16	FREQUENCY FINE	9D~~63 : -99~~99		10/30
17	LEVEL	00~~63 : 0~~99		11/31
18	BPF 3 RESONANCE	00~~63 : 0~~99		12/32
19	FREQUENCY COARSE	00~~0F : 01~~16		13/33
20	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	14/34
21	INTENSITY	F1~~0F : -15~~15		15/35
22	FREQUENCY FINE	9D~~63 : -99~~99		16/36
23	LEVEL	00~~63 : 0~~99		17/37
24	BPF 4 RESONANCE	00~~63 : 0~~99		18/38
25	FREQUENCY COARSE	00~~0F : 01~~16		19/39
26	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	1A/3A
27	INTENSITY	F1~~0F : -15~~15		1B/3B
28	FREQUENCY FINE	9D~~63 : -99~~99		1C/3C
29	LEVEL	00~~63 : 0~~99		1D/3D
30	RESONANCE MODULATION AMS	00~~29 : *2-1	Alternate Modulation	1E/3E

31	INTENSITY	9D~~63 : -99~~99	1F/3F
32~~37	(Reserved)	0	0 Fixed
4:Ring Modulation		ParamID = 42	
00	WAVE INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2	00/09
01	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine	01/0A
02	MODULATION DEPTH DEPTH	00~~63 : 0~~99	02/0B
03	DEPTH AMS 1	00~~29 : *2-1	Alternate Modulation 03/0C
04	INTENSITY	9D~~63 : -99~~99	04/0D
05	DEPTH AMS 2	00~~29 : *2-1	Alternate Modulation 05/0E
06	INTENSITY	9D~~63 : -99~~99	06/0F
07	TYPE	00~~01 : 1~~2	07/10
08	WAVE EDGE	00~~63 : 0~~99	08/11
09~~37	(Reserved)	0	0 Fixed
5:Cross Modulation		ParamID = 43	
00	WAVE INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2	00/08
01	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine	01/09
02	MODULATION DEPTH DEPTH	00~~63 : 0~~99	02/0A
03	DEPTH AMS 1	00~~29 : *2-1	Alternate Modulation 03/0B
04	INTENSITY	9D~~63 : -99~~99	04/0C
05	DEPTH AMS 2	00~~29 : *2-1	Alternate Modulation 05/0D
06	INTENSITY	9D~~63 : -99~~99	06/0E
07	WAVE EDGE	00~~63 : 0~~99	07/0F
08~~37	(Reserved)	0	0 Fixed
6:Sync Modulation		ParamID = 44	
00	WAVE INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2	00/03
01	SLAVE WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine	01/04
02	WAVE EDGE	00~~63 : 0~~99	02/05
03~~37	(Reserved)	0	0 Fixed
7:Organ Model		ParamID = 45	
00	DRAWBAR 1 WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle	00/19
01	HARMONICS COARSE	00~~0F: 1('16)~~16('1)	01/1A

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02	HARMONICS FINE	9D~~63 : -99~~99		02/1B
+-----+-----+-----+-----+-----+				
03	LEVEL	00~~63 : 0~~99		03/1C
+-----+-----+-----+-----+-----+				
04	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	04/1D
+-----+-----+-----+-----+-----+				
05	INTENSITY	9D~~63 : -99~~99		05/1E
+-----+-----+-----+-----+-----+				
06	PERCUSSION LEVEL	00~~63 : 0~~99		06/1F
+-----+-----+-----+-----+-----+				
07	DRAWBAR 2 WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		07/20
+-----+-----+-----+-----+-----+				
08	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		08/21
+-----+-----+-----+-----+-----+				
09	HARMONICS FINE	9D~~63 : -99~~99		09/22
+-----+-----+-----+-----+-----+				
10	LEVEL	00~~63 : 0~~99		0A/23
+-----+-----+-----+-----+-----+				
11	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	0B/24
+-----+-----+-----+-----+-----+				
12	INTENSITY	9D~~63 : -99~~99		0C/25
+-----+-----+-----+-----+-----+				
13	PERCUSSION LEVEL	00~~63 : 0~~99		0D/26
+-----+-----+-----+-----+-----+				
14	DRAWBAR 3 WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		0E/27
+-----+-----+-----+-----+-----+				
15	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		0F/28
+-----+-----+-----+-----+-----+				
16	HARMONICS FINE	9D~~63 : -99~~99		10/29
+-----+-----+-----+-----+-----+				
17	LEVEL	00~~63 : 0~~99		11/2A
+-----+-----+-----+-----+-----+				
18	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	12/2B
+-----+-----+-----+-----+-----+				
19	INTENSITY	9D~~63 : -99~~99		13/2C
+-----+-----+-----+-----+-----+				
20	PERCUSSION LEVEL	00~~63 : 0~~99		14/2D
+-----+-----+-----+-----+-----+				
21	PERCUSSION GENERATOR TRIGGER MODE	0:Single, 1:Multi		15/2E
+-----+-----+-----+-----+-----+				
22	DECAY	00~~63 : 0~~99		16/2F
+-----+-----+-----+-----+-----+				
23	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	17/30
+-----+-----+-----+-----+-----+				
24	INTENSITY	9D~~63 : -99~~99		18/31
+-----+-----+-----+-----+-----+				
25~~37	(Reserved)	0	0 Fixed	-----
+-----+-----+-----+-----+-----+				
8:E.Piano Model			ParamID = 46	
+-----+-----+-----+-----+-----+				
00	HAMMER FORCE	00~~63 : 0~~99		00/0E
+-----+-----+-----+-----+-----+				
01	VELOCITY CURVE	FF:Off, 0~~63 : 0~~99		01/0F
+-----+-----+-----+-----+-----+				
02	WIDTH	00~~63 : 0~~99		02/10
+-----+-----+-----+-----+-----+				
03	CLICK NOISE LEVEL	00~~63 : 0~~99		03/11
+-----+-----+-----+-----+-----+				
04	TONE GENERATOR DECAY	00~~63 : 0~~99		04/12
+-----+-----+-----+-----+-----+				
05	RELEASE	00~~63 : 0~~99		05/13
+-----+-----+-----+-----+-----+				
06	OVERTONE LEVEL	00~~63 : 0~~99		06/14

07	FREQUENCY	00~~63 : 0~~99		07/15
08	DECAY	00~~63 : 0~~99		08/16
09	PICKUP LOCATION	00~~63 : 0~~99		09/17
10	LOCATION AMS	00~~29 : *2-1	Alternate Modulation	0A/18
11	INTENSITY	9D~~63 : -99~~99		0B/19
12	LOW EQ FREQUENCY	00~~31 : 0~~49		0C/1A
13	GAIN	EE~~12 : -18~~18 [dB]		0D/1B
14~~37	(Reserved)	0	0 Fixed	-----
9:Brass Model			ParamID = 47	
00	INSTRUMENT TYPE	00~~02:Brass1~~3, 03~~04:Horn1~~2, 05:Reed Brass		00
01	bit0 JUMP BEND SW JS(+X)	0:OFF, 1:ON		01
	bit1 JS(-X)	0:OFF, 1:ON		02
02	BREATH PRESSURE MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	03
03	INTENSITY	9D~~63 : -99~~99		04
04	AMS 1	00~~29 : *2-1	Alternate Modulation	05
05	INTENSITY	9D~~63 : -99~~99		06
06	AMS 2	00~~29 : *2-1	Alternate Modulation	07
07	INTENSITY	9D~~63 : -99~~99		08
08	(Reserved)	0	0 Fixed	-----
09	LIP CHARACTER LIP	00~~63 : 0~~99		09
10	AMS	00~~29 : *2-1	Alternate Modulation	0A
11	INTENSITY	9D~~63 : -99~~99		0B
12~~14	(Reserved)			-----
15	BELL CHARACTER TONE	00~~63 : 0~~99		0C
16	RESONANCE	00~~63 : 0~~99		0D
17	BREATH NOISE	00~~63 : 0~~99		0E
18~~27	(Reserved)			-----
28	PEAKING EQ FREQUENCY	00~~31 : 0~~49		0F
29	Q	00~~1D : 0~~29		10
30	GAIN	EE~~12 : -18~~18 [dB]		11
31	STRENGTH	00~~63 : 0~~99		12

32~~37	(Reserved)			----
10:Reed Model			ParamID = 48	
00	INSTRUMENT TYPE	00~~02:Hard Sax 1~~3, 03~~04:Soft Sax 1~~2, 05~~06:Double Reed 1~~2, 07:Bassoon, 08:Clarinet, 09~~0A:Flute 1~~2, 0B:Pan Flute, 0C:Ocarina, 0D:Shakuhachi, 0E~~0F:Harmonica 1~~2, 10:Reed Synth		00
01	bit0	JUMP BEND SW JS(+X)	0:OFF, 1:ON	01
	bit1	JS(-X)	0:OFF, 1:ON	02
02	BREATH PRESSURE MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	03
03	INTENSITY	9D~~63 : -99~~99		04
04	AMS 1	00~~29 : *2-1	Alternate Modulation	05
05	INTENSITY	9D~~63 : -99~~99		06
06	AMS 2	00~~29 : *2-1	Alternate Modulation	07
07	INTENSITY	9D~~63 : -99~~99		08
08~~12	(Reserved)			----
13	BREATH NOISE	00~~63 : 0~~99		09
14~~25	(Reserved)			----
26	REED CHARACTER AMS	00~~29 : *2-1	Alternate Modulation	0A
27	INTENSITY	9D~~63 : -99~~99		0B
28	BELL CHARACTER TONE	00~~63 : 0~~99		0C
29	RESONANCE	00~~63 : 0~~99		0D
30	PEAKING EQ FREQUENCY	00~~31 : 0~~49		0E
31	Q	00~~1D : 0~~29		0F
32	GAIN	EE~~12 : -18~~18 [dB]		10
33	(Reserved)			----
34	WAVE SHAPE OFFSET	9D~~63 : -99~~99		11
35	b0~~6	SHAPE	00~~63 : 0~~99	12
	bit7	TYPE	0:Clip, 1:Reso	13
36	SHAPE AMS	00~~29 : *2-1	Alternate Modulation	14
37	INTENSITY	9D~~63 : -99~~99		15
11:Plucked String Model			ParamID = 49	
00	ATTACK LEVEL	00~~63 : 0~~99		00

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01	VELOCITY CTRL	9D~~63 : -99~~99		01
+-----+-----+-----+-----+-----+				
02	CURVE UP	00~~63 : 0~~99		02
+-----+-----+-----+-----+-----+				
03	VELOCITY CTRL	9D~~63 : -99~~99		03
+-----+-----+-----+-----+-----+				
04	CURVE DOWN	00~~63 : 0~~99		04
+-----+-----+-----+-----+-----+				
05	VELOCITY CTRL	9D~~63 : -99~~99		05
+-----+-----+-----+-----+-----+				
06	NOISE LEVEL	00~~63 : 0~~99		06
+-----+-----+-----+-----+-----+				
07	VELOCITY CTRL	9D~~63 : -99~~99		07
+-----+-----+-----+-----+-----+				
08	STRING PICKING POINT	00~~63 : 0~~99		08
+-----+-----+-----+-----+-----+				
09	POINT AMS	00~~29 : *2-1	Alternate Modulation	09
10	INTENSITY	9D~~63 : -99~~99		0A
+-----+-----+-----+-----+-----+				
11	DISPERSION	00~~63 : 0~~99		0B
+-----+-----+-----+-----+-----+				
12	DISPERSION AMS	00~~29 : *2-1	Alternate Modulation	0C
13	INTENSITY	9D~~63 : -99~~99		0D
+-----+-----+-----+-----+-----+				
14	DAMP	00~~63 : 0~~99		0E
+-----+-----+-----+-----+-----+				
15	DAMP KBD TRACK	9D~~63 : -99~~99		0F
+-----+-----+-----+-----+-----+				
16	DAMP AMS	00~~29 : *2-1	Alternate Modulation	10
17	INTENSITY	9D~~63 : -99~~99		11
+-----+-----+-----+-----+-----+				
18	DECAY	00~~63 : 0~~99		12
+-----+-----+-----+-----+-----+				
19	DECAY KBD TRACK	9D~~63 : -99~~99		13
+-----+-----+-----+-----+-----+				
20	RELEASE	00~~63 : 0~~99		14
+-----+-----+-----+-----+-----+				
21	HARMONICS HARMONICS POINT	00~~63 : 0~~99		15
+-----+-----+-----+-----+-----+				
22	HARMONICS CTRL	00~~29 : *2-1		16
+-----+-----+-----+-----+-----+				
23	INTENSITY	9D~~63 : -99~~99		17
+-----+-----+-----+-----+-----+				
24	PICKUP SW	0:OFF, 1:ON		18
+-----+-----+-----+-----+-----+				
25	LOCATION	00~~63 : 0~~99		19
+-----+-----+-----+-----+-----+				
26	LOCATION AMS	00~~29 : *2-1	Alternate Modulation	1A
27	INTENSITY	9D~~63 : -99~~99		1B
+-----+-----+-----+-----+-----+				
28	LOW EQ FREQUENCY	00~~31 : 0~~49		1C
+-----+-----+-----+-----+-----+				
29	GAIN	EE~~12 : -18~~18 [dB]		1D
+-----+-----+-----+-----+-----+				
30	LOW BOOST	00~~63 : 0~~99		1E
+-----+-----+-----+-----+-----+				
31~~37	(Reserved)	0	0 Fixed	----
+-----+-----+-----+-----+-----+				
12:Bowed String Model			ParamID = 4A	
+-----+-----+-----+-----+-----+				
	BOW SPEED			

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00	MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	00
01	INTENSITY	9D~~63 : -99~~99		01
02	AMS 1	00~~29 : *2-1	Alternate Modulation	02
03	INTENSITY	9D~~63 : -99~~99		03
04	AMS 2	00~~29 : *2-1	Alternate Modulation	04
05	INTENSITY	9D~~63 : -99~~99		05
06	DIFFERENTIAL	0:OFF, 1:ON		06
07	BOW PRESSURE MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	07
08	INTENSITY	9D~~63 : -99~~99		08
09	AMS	00~~29 : *2-1	Alternate Modulation	09
10	INTENSITY	9D~~63 : -99~~99		0A
11	ROSIN	00~~63 : 0~~99		0B
12	STRING BOWING POINT	00~~63 : 0~~99		0C
13	POINT AMS	00~~29 : *2-1	Alternate Modulation	0D
14	INTENSITY	9D~~63 : -99~~99		0E
15	DAMP	00~~63 : 0~~99		0F
16	DAMP KBD TRACK KEY	00~~7F : C-1~~G9		10
17	RAMP LOW	9D~~63 : -99~~99		11
18	RAMP HIGH	9D~~63 : -99~~99		12
19	DAMP AMS	00~~29 : *2-1	Alternate Modulation	13
20	INTENSITY	9D~~63 : -99~~99		14
21	DISPERSION	00~~63 : 0~~99		15
22	DISPERSION AMS	00~~29 : *2-1	Alternate Modulation	16
23	INTENSITY	9D~~63 : -99~~99		17
24	REFLECTION	00~~63 : 0~~99		18
25	REFLECTION AMS	00~~29 : *2-1	Alternate Modulation	19
26	INTENSITY	9D~~63 : -99~~99		1A
27	PEAKING EQ FREQUENCY	00~~31 : 0~~49		1B
28	Q	00~~1D : 0~~29		1C
29	GAIN	EE~~12 : -18~~18 [dB]		1D
30~~37	(Reserved)			----

*2-1 : Alternate Modulation Source for MOSS

00 : Off,

01 : EG 1,

02 : EG 2,

03 : EG 3,

04 : EG 4,	05 : Amp EG,	06 : LFO 1,	07 : LFO 2,
08 : LFO 3,	09 : LFO 4,	0A : Portamento,	0B : Note No. Linear,
0C : Note No. Exp.,	0D : Note Split High,	0E : Note Split Low,	0F : Velocity Soft,
10 : Velocity Med.,	11 : Velocity Hard,	12 : After Touch,	13 : JS X,
14 : JS +Y:CC#01,	15 : JS -Y:CC#02,	16 : JS +Y & AT/2,	17 : JS -Y & AT/2,
18 : Pedal:CC#04,	19 : Ribbon:CC#16,	1A : Ribbon +X,	1B : Ribbon -X,
1C : Slider:CC#18,	1D : KnobMod1:#17,	1E : KnobMod2:#19,	1F : KnobMod3:#20,
20 : KnobMod4:#21,	21 : KnobMod1 [+],	22 : KnobMod2 [+],	23 : KnobMod3 [+],
24 : KnobMod4 [+],	25 : Damper:#64,	26 : SW 1:CC#80,	27 : SW 2:CC#81,
28 : Foot SW:#82,	29 : MIDI:CC#83		

[TABLE 3] 1 COMBINATION PARAMETERS

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PARA No. : Parameter ID & SUB ID [HEX] for PARAMETER CHANGE. n : Timbre No.(1~~8:T1~~T8)

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00 : 15	COMBI. NAME (Head) : COMBI. NAME (Tail)	20~~7F		----
INSERT EFFECT 1 PARAMETERS				
16 : 31	Insert Effect 1 Parameter Structure (16Bytes) (See midifx.txt.)			0D,?? : 0D,??
32	Effect Type	00~~59 , 00:No Effect ~ 89:Reverb - Gate		0C,00
b0~~b5	Control Channel	00~~0F:MIDI Channel 1~~16, 10:Global Channel, 11:All Routed		0C,22
33 b6	ON/OFF	0:Off, 1:ON		0C,05
b7	CHAIN	0:Not chain, 1:Chain		0C,1E
34	(Reserved)			----
35	(Reserved)			----
36	PAN	00~~7F : L000~~R127		0C,0A
37	BUS Select	00:L/R, 01~~04:1~~4, 05:1/2, 06:3/4, 07:Off		0C,0F
38	Send 1 Level	00~~7F : 00~~127		0C,14
39	Send 2 Level	00~~7F : 00~~127		0C,19
INSERT EFFECT 2 PARAMETERS				
40 : 55	Insert Effect 2 Parameter Structure (16Bytes) (See midifx.txt.)			0E,?? : 0E,??
56	Effect Type	00~~66 , 00:No Effect ~ 102:Hold Delay		0C,01
57 : 63	INSERT EFFECT 2 PARAMETERS (Same as INSERT EFFECT 1 (33 ~ 39) 7 Bytes) SID : SID of 'INSERT EFFECT 1' + 1			0C,06 : 0C,1F
INSERT EFFECT 3 PARAMETERS				
64 : 79	Insert Effect 3 Parameter Structure (16Bytes) (See midifx.txt.)			0F,?? : 0F,??
80	Effect Type	00~~66 , 00:No Effect ~ 102:Hold Delay		0C,02
81 : 	INSERT EFFECT 3 PARAMETERS (Same as INSERT EFFECT 1 (33 ~ 39) 7 Bytes)			0C,07 :

87	SID : SID of INSERT EFFECT 1' + 2		0C,20
INSERT EFFECT 4 PARAMETERS			
88			10,??
:	Insert Effect 4 Parameter Structure (16Bytes)		:
103	(See midifx.txt.)		10,??
104	Effect Type	00~~66 , 00:No Effect ~~ 102:Hold Delay	0C,03
105	INSERT EFFECT 4 PARAMETERS		0C,08
:	(Same as INSERT EFFECT 1 (33 ~~ 39) 7 Bytes)		:
111	SID : SID of 'INSERT EFFECT 1' + 3		0C,21
INSERT EFFECT 5 PARAMETERS			
112			11,??
:	Insert Effect 5 Parameter Structure (16Bytes)		:
127	(See midifx.txt.)		11,??
128	INSERT EFFECT 5 PARAMETERS		0C,04
:	(Same as INSERT EFFECT 1 (32 ~~ 39) 8 Bytes except 'CHAIN' parameter)		:
135	SID : SID of 'INSERT EFFECT 1' + 4		0C,1D
MASTER EFFECT PARAMETERS			
136			13,??
:	MFX1 Effect Parameter Structure (16Bytes)		:
151	(See midifx.txt.)		13,??
152	MFX1 Effect Type	00~~59 , 00:No Effect ~~ 89:Reverb - Gate	12,00
b0~~b5	Control Channel	00~~0F:MIDI Channel 1~~16, 10:Global Channel	12,0A
153	b6	MFX1 ON/OFF	12,02
	b7	(Reserved)	----
154	(Reserved)		----
155	(Reserved)		----
156			14,??
:	MFX2 Effect Parameter Structure (16Bytes)		:
171	(See midifx.txt.)		14,??
172	MFX2 Effect Type	00~~59 , 00:No Effect ~~ 89:Reverb - Gate	12,01
b0~~b5	Control Channel	00~~0F:MIDI Channel 1~~16, 10:Global Channel	12,0B
173	b6	MFX2 ON/OFF	12,03
	b7	(Reserved)	----
174	(Reserved)		----
175	(Reserved)		----
176	MFX1 Return Level	00~~7F : 00~~127	12,04
177	MFX2 Return Level	00~~7F : 00~~127	12,05
b0~~b1	MFX Chain Signal	0:LR Mix, 1:L Only, 2:R Only	12,08
178	b2	MFX Chain Direction	12,07
	b3	MFX Chain ON/OFF	12,06
179	MFX Chain Level	00~~7F : 00~~127	12,09

180	Master EQ Low Gain	EE~~12 : -18.0~~+18.0dB (0.5dB step)	15,00
181	Master EQ Mid Gain	EE~~12 : -18.0~~+18.0dB (0.5dB step)	15,01
182	Master EQ High Gain	EE~~12 : -18.0~~+18.0dB (0.5dB step)	15,02
183	Master EQ Low Fc	00~~31 , 0:20Hz ~ 49:1.00kHz	15,03
184	Master EQ Mid Fc	00~~61 , 0:300Hz ~ 97:10.00kHz	15,04
185	Master EQ High Fc	00~~C3 , 0:500Hz ~ 195:20.00kHz	15,05
186	Master EQ Mid Q	00~~5F , 0:0.5 ~ 95:10.0 (0.1 step)	15,06
187	Master EQ Low DMod	00~~1F : Off~Tempo(See '*1' in midifx.txt)	15,07
188	Master EQ High DMod	00~~1F : Off~Tempo(See '*1' in midifx.txt)	15,08
189	Mst.EQ Ctrl.Channel	00~~0F:MIDI Channel 1~~16, 10:Global Channel	12,0C
190	Arp.Gate Control		----
191	Arp.Velocity Control		----
ARPEGGIATOR PARAMETERS			
192	TEMPO	28~~F0 : 40~~240	09,00
bit0	SWITCH	0:OFF, 1:ON	09,01
193 bit1	ARPEGGIATOR RUN A	0:OFF, 1:ON	09,02
bit2	ARPEGGIATOR RUN B	0:OFF, 1:ON	09,03
ARPEGGIATOR A			
194	PATTERN NO.	00~~1FF : 0~~511 0~~1FF : 0~~511 **1-8	0A,00
b0~~1	OCTAVE	00~~03 : 1~~4	0A,02
195 b2~~4	RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4	0A,01
b5	PATTERN NO. MSB	0 or 1 0~~1FF : 0~~511 **1-8	0A,00
196	GATE	00~~64 : 0~~100[%], 65:Step	0A,03
197	VELOCITY	01~~7F : 1~~127, 80:Key, 81:Step	0A,04
198	SWING	9C~~64 : -100~~100	0A,05
bit0	SORT	0:OFF, 1:ON	0A,06
bit1	LATCH	0:OFF, 1:ON	0A,07
199 bit2	KEY SYNC.	0:OFF, 1:ON	0A,08
bit3	KEYBOARD	0:OFF, 1:ON	0A,09
200	TOP KEY	00~~7F : C-1~~G9	0A,0A
201	BOTTOM KEY	00~~7F : C-1~~G9	0A,0B
202	TOP VELOCITY	01~~7F : 1~~127	0A,0C
203	BOTTOM VELOCITY	01~~7F : 1~~127	0A,0D
ARPEGGIATOR B			

204				0B,00
:	Same as ARPEGGIATOR A (194~~203)		:	
213	(10 Bytes)		0B,0D	

COMMON PARAMETERS				

b0~~3	CATEGORY	00~~0F : 0~~15		00,00
214				
b4~~7	MOSS BUS SELECT	00~~07 : TIMBRE1~~8		00,0F

215	SCALE TYPE	00~~1A : **1-1		00,01

216	SCALE KEY	00~~0B : C~~B		00,02

217	RANDOM INTENSITY	00~~07 : 0~~7	Normal = 0	00,03

b0~~5	SW 1 ASSIGN TYPE	00~~0C : **1-2		00,04

218	bit6	SW1 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary	00,08

bit7	SW 1 ON/OFF	0:OFF, 1:ON		00,06

b0~~5	SW 2 ASSIGN TYPE	00~~0C : **1-2		00,05

219	bit6	SW2 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary	00,09

bit7	SW 2 ON/OFF	0:OFF, 1:ON		00,07

b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		00,0A
220				
bit7	REALTIME CONTROLS	0:A, 1:B		00,0E

221	KNOB 2 ASSIGN TYPE	00~~7C : **1-3		00,0B

222	KNOB 3 ASSIGN TYPE	00~~7C : **1-3		00,0C

223	KNOB 4 ASSIGN TYPE	00~~7C : **1-3		00,0D

TIMBRE 1 PARAMETER				

224	PROGRAM NO.	00~~7F : 00~~127		n,00

225	PROGRAM BANK	00~~10 : Bank A~~g(d)		n,00

b0~~b4	MIDI CHANNEL	00~~0F : MIDI Channel 1~~16, 10:Global Channel		n,04
226				
b5~~b7	STATUS	0:INT, 1:Off, 2:EXT, 3:EX2		n,03

227	BANK SELECT MSB	00~~7F : 00~~127	Available only	n,05

228	BANK SELECT LSB	00~~7F : 00~~127	when status is EXT2.	n,06

229	VOLUME	00~~7F : 00~~127		n,02

230	PITCH BEND RANGE	E7:PROG, E8~~18 : -24~~24		n,0C

231	TRANPOSE	E8~~18 : -24~~24		n,0A

232	DETUNE MSB			

		FB50~~4B0: -1200~~1200		n,0B
233	DETUNE LSB			

234	DELAY START	00~~60,61 : **1-5		n,0D

235	PAN	00:RND, 01~~7F : L001~~R127		n,01

236	SEND 1 LEVEL	00~~7F : 00~~127		n,29

237	SEND 2 LEVEL	00~~7F : 00~~127		n,2A

	b1~~ 3	DRUMKIT IFX4 Patch		n, 2E
238	b4~~ 6	DRUMKIT IFX5 Patch		n, 2F
	bit0			
		DRUMKIT IFX3 Patch	0:IFX1, 1:IFX2, 2:IFX3, 3:IFX4, 4:IFX5, 5:L/R	n, 2D
	b6~~ 7			
239	b0~~ 2	DRUMKIT IFX1 Patch		n, 2B
	b3~~ 5	DRUMKIT IFX2 Patch		n, 2C
240		BUS SELECT	0:DKit, 1:L/R, 2~~6:IFX1~~5, 7~~A:1~~4, B:1/2, C:3/4, D:Off	n, 28
	bit0	PROGRAM CHANGE FILT	0:DIS, 1:ENA	n, 0F
	bit1	AFTER TOUCH FILTER	0:DIS, 1:ENA	n, 10
	bit2	DAMPER FILTER	0:DIS, 1:ENA	n, 11
	bit3	PORTAMENTO FILTER	0:DIS, 1:ENA	n, 12
241	bit4	JS(X) AS AMS FILTER	0:DIS, 1:ENA	n, 13
	bit5	JS(Y+) FILTER	0:DIS, 1:ENA	n, 14
	bit6	JS(Y-) FILTER	0:DIS, 1:ENA	n, 15
	bit7	RIBBON FILTER	0:DIS, 1:ENA	n, 16
	bit0	ASSIGN KNOB 1 FILTER	0:DIS, 1:ENA	n, 17
	bit1	ASSIGN KNOB 2 FILTER	0:DIS, 1:ENA	n, 18
	bit2	ASSIGN KNOB 3 FILTER	0:DIS, 1:ENA	n, 19
	bit3	ASSIGN KNOB 4 FILTER	0:DIS, 1:ENA	n, 1A
242	bit4	ASSIGN SW 1 FILTER	0:DIS, 1:ENA	n, 1B
	bit5	ASSIGN SW 2 FILTER	0:DIS, 1:ENA	n, 1C
	bit6	FOOT PEDAL/SW FILTER	0:DIS, 1:ENA	n, 1D
	bit7	OTHER CONTROL FILTER	0:DIS, 1:ENA	n, 1E
	b0,1	FORCE OSC MODE	0:Program, 1:Poly, 2:Mono, 3:Mono Legate	n, 07
	b2,3	OSC SELECT	0:BOTH, 1:OSC1, 2:OSC2	n, 08
243	b4,5	ARPEGGIATOR ASSIGN	0:OFF, 1:A, 2:B	n, 27
	bit6	USE PROGRAM'S SCALE	0:DIS, 1:ENA	n, 0E
244		PORTAMENT TIME	FF:PRG, 00:Off, 01~~7F : 1~~127	n, 09
245		KEY Z TOP	00~~7F : C-1~~G9	n, 1F
246		KEY Z BOTTOM	00~~7F : C-1~~G9	n, 22
	b0~~3	KEY Z TOP SLOPE	0~~F: **3-1	n, 20
247	b4~~7	KEY Z BOTTOM SLOPE	0~~F: **3-1	n, 21
248		VEL Z TOP	01~~7F : 1~~127	n, 23
249		VEL Z BOTTOM	01~~7F : 1~~127	n, 26

Version 1.9 (Aug.01.'02)

**3-1 : 0 : 0	1 : 1 (Semi tone)	2 : 2	3 : 3
4 : 4	5 : 6 (0.5 Oct)	6 : 8	7 : 10
8 : 12 (1 Oct)	9 : 18 (1.5 Oct)	A : 24 (2 Oct)	B : 30 (2.5 Oct)
C : 36 (3 Oct)	D : 48 (4 Oct)	E : 60 (5 Oct)	F : 72 (6 Oct)

2002.02.20

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION
GLOBAL PARAMETER			
00	MASTER TUNE	CE~~32 : -50~~50[Cent]	
01	KEY TRANSPOSE	F4~~0C : -12~~12	
02	VELOCITY CURVE	0~~7 : 1~~8	
03	AFTER TOUCH CURVE	0~~7 : 1~~8	
04	bit0	FOOT SW POLARITY	0:-, 1:+
	bit1	DAMPER POLARITY	0:-, 1:+
	bit2	CONVERT POSITION	0:PreMIDI, 1:PostMIDI
	bit3	PROG AUTO ARP	0:OFF, 1:ON
	bit4	COMBI AUTO ARP	0:OFF, 1:ON
05	FOOT SW ASSIGN	00~~14 : **4-1	
06	FOOT PEDAL ASSIGN	00~~13 : **4-2	
07	bit0,1	SYSTEM CLOCK	00~~03 : **4-3
	bit3	AUTO OPTIMIZE RAM	0:OFF, 1:ON
	bit4,5	S/P DIF SAMPLE RATE	00~~02 : **4-4
	bit7	WAV FILE PLAY LEVEL	0:Normal,1:High(+12dB)
08 : 199	USER SCALE (Octave) (12*16 Bytes)	9D~~63 : -99~~99 [Cent]	
200 : 327	USER SCALE (All Notes) (128 Bytes)	9D~~63 : -99~~99 [Cent]	
328 : 583	PROG CATEGORY NAME (16*16 Bytes)	20~~7F [ASCII CODE]	
584 : :	COMBI CATEGORY NAME	20~~7F [ASCII CODE]	

839	(16*16 Bytes)		
+-----+			
	AUDIO INPUT 1		
+-----+			
840	LEVEL	00~~7F : 00~~127	
+-----+			
841	PAN	00~~7F : L000~~R127	
+-----+			
842	SEND 1 LEVEL	00~~7F : 00~~127	
+-----+			
843	SEND 2 LEVEL	00~~7F : 00~~127	
+-----+			
844	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off	
+-----+			
	AUDIO INPUT 2		
+-----+			
845	: Same as AUDIO INPUT 1 (840~~844)		
849			
	(5 Bytes)		
+-----+			
	S/P DIF INPUT 1		
+-----+			
850	: Same as AUDIO INPUT 1 (840~~844)		
854			
	(5 Bytes)		
+-----+			
	S/P DIF INPUT 2		
+-----+			
855	: Same as AUDIO INPUT 1 (840~~844)		
859			
	(5 Bytes)		
+-----+			
	mLAN INPUT 1		
+-----+			
860	: Same as AUDIO INPUT 1 (840~~844)		
864			
	(5 Bytes)		
+-----+			
	mLAN INPUT 2		
+-----+			
865	: Same as AUDIO INPUT 1 (840~~844)		
869			
	(5 Bytes)		
+-----+			

**4-1 : 0 : OFF	1 : FOOT SW:CC#82	2 : PORTAMENTO SW:CC#65	3 :
SOSTENUTO:CC#66			
4 : SOFT:CC#67	5 : ARPEGGIO SW	6 : PROGRAM UP	7 : PROGRAM DOWN
8 : SONG START/STOP	9 : SONG PUNCH IN/OUT	A : CUE REPEAT CONTROL	B : JS+Y:CC#01
C : JS-Y:CC#02	D : RIBBON:CC#16	E : SLIDER:CC#18	F : KNOB 1
10 : KNOB 2	11 : KNOB 3	12 : KNOB 4	13 : SW 1
14 : SW 2			

**4-2 : 0 : OFF	1 : MASTER VOLUME	2 : FOOT PEDAL:CC#04	3 : PORTAMENTO
TIME:CC#05			
4 : VOLUME:CC#07	5 : POST IFX PAN:CC#08	6 : PAN:CC#10	7 :
EXPRESSION:CC#11			
8 : FX CONTROL 1:CC#12	9 : FX CONTROL 2:CC#13	A : MFX SEND 1:CC#93	B : MFX SEND
2:CC#91			
C : JS+Y:CC#01	D : JS-Y:CC#02	E : RIBBON:CC#16	F : SLIDER:CC#18
10 : KNOB 1	11 : KNOB 2	12 : KNOB 3	13 : KNOB 4

**4-3 : 0 : INTERNAL	1 : WORD CLOCK	2 : mLAN	3 : S/P DIF
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**4-4 : 0 : 48kHz	1 : 96kHz(NORMAL)	2 : 96kHz(HI ENHANCED)
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[TABLE 5] Parameter No. at COMBINATION PLAY mode
n(=0~~7) : Timbre 1~~8

+-----+

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
TIMBRE PARAMETER			
BANK/PROGRAM	00~~87F : A000~~g(d)128		n,00
PAN	00:RND, 01~~7F : L001~~R127		n,01
VOLUME	00~~7F : 0~~127		n,02
STATUS	0:INT, 1:Off, 2:EXT, 3:EX2		n,03
ARPEGGIO PARAMETER			
TEMPO	28~~F0 : 40~~240		08,00
SWITCH	0:OFF, 1:ON		08,01
ARPEGGIATOR RUN A	0:OFF, 1:ON		08,02
ARPEGGIATOR RUN B	0:OFF, 1:ON		08,03
GATE	C0~~3F : -64~~63	Arpeggiator gate knob parameter	08,04
VELOCITY	C0~~3F : -64~~63	Arpeggiator velocity knob parameter	08,05
ARPEGGIATOR-A PARAMETER			
PATTERN NO.	00~~1FF : 0~~511		09,00
RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		09,01
OCTAVE	00~~03 : 1~~4		09,02
SORT	0:OFF, 1:ON		09,06
LATCH	0:OFF, 1:ON		09,07
KEY SYNC.	0:OFF, 1:ON		09,08
KEYBOARD	0:OFF, 1:ON		09,09
ARPEGGIATOR-B PARAMETER			
Same as ARPEGGIATOR-A PARAMETER			0A,00~~09
SWITCH PARAMETER			
SW 1 ON/OFF	0:OFF, 1:ON		0B,00
SW 2 ON/OFF	0:OFF, 1:ON		0B,01
REALTIME CONTROLS	0:A, 1:B		0B,02

[TABLE 6] Parameter No. at PROGRAM PLAY mode

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
PERFORMANCE EDITOR			
OCTAVE	FD~~03 : -3~~3		00,00
PITCH STRETCH	F4~~0C : -12~~12	Only for PCM program	00,01
OSC BALANCE	F6~~0A : -10~~10		00,02
AMP LEVEL	F6~~0A : -10~~10		00,03

ATTACK TIME	F6~~0A : -10~~10		00,04
DECAY TIME	F6~~0A : -10~~10		00,05
IFX BALANCE	F6~~0A : -10~~10		00,06
MFx BALANCE	F6~~0A : -10~~10		00,07
ARPEGGIATOR PARAMETER Under Parameter's right side of '/' is Parameter ID of EXB-MOSS.			
TEMPO	28~~F0 : 40~~240		01/03,00
SWITCH	0:OFF, 1:ON		01/03,01
GATE	C0~~3F : -64~~63	Arpeggiator gate knob parameter	01/03,02
VELOCITY	C0~~3F : -64~~63	Arpeggiator velocity knob parameter	01/03,03
PATTERN NO.	00~~1FF : 0~~511		02/04,00
RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		02/04,01
OCTAVE	00~~03 : 1~~4		02/04,02
SORT	0:OFF, 1:ON		02/04,06
LATCH	0:OFF, 1:ON		02/04,07
KEY SYNC.	0:OFF, 1:ON		02/04,08
KEYBOARD	0:OFF, 1:ON		02/04,09
SWITCH PARAMETER Under Parameter's right side of '/' is Parameter ID of EXB-MOSS.			
SW 1 ON/OFF	0:OFF, 1:ON		05/06,00
SW 2 ON/OFF	0:OFF, 1:ON		05/06,01
REALTIME CONTROLS	0:A, 1:B		05/06,02

[TABLE 7] 1 DRUMKIT PARAMETERS

2002.01.24

No. : No. in the DRUMKIT DUMP DATA.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00 : 15	DRUMKIT NAME (Head) : DRUMKIT NAME (Tail)	20~~7F		----
KEY=C-1 PARAMETERS				
16	HIGHER BANK	0:ROM, 1:RAM, ~~~???	??? is depend on PCM option.	00/0B
bit0	HIGHER START OFFSET	0:OFF, 1:ON		02/0D
bit1	HIGHER REVERSE	0:OFF, 1:ON		03/0E
18	HIGH SAMPLE NO(MSB)	00~~1A0 : 00~~416	Higher Vel's Drumsample	01/0C
19	HIGH SAMPLE NO(LSB)			
20	HIGHER LEVEL	9D~~63 : -99~~99		04/0F
21	HIGHER TRANSPOSE	C0~~3F : -64~~63		05/10
22	HIGHER TUNE	9D~~63 : -99~~99		06/11

23	HIGHER ATTACK LEVEL	C0~~3F : -64~~63		07/12
24	HIGHER DECAY LEVEL	C0~~3F : -64~~63		08/13
25	HIGHER CUTOFF LEVEL	C0~~3F : -64~~63		09/14
26	HIGH RESONANCE LEVEL	C0~~3F : -64~~63		0A/15
27	(RESERVED)			----
28	LOWER			
:	Same as HIGHER (16~~27)			
39	(12 Bytes)	(Above Parameter's right side of '/' is PARA No. of LOWER.)		
40	PAN	00:RND, 01~~7F : L001~~R127		16
41	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~09:1~~4,0A:1/2,0B:3/4,0C:Off		17
42	SEND 1 LEVEL	00~~7F: 00~~127		18
43	SEND 2 LEVEL	00~~7F: 00~~127		19
44	EXCLUSIVE GROUP	00:Off, 01~~7F : 001~~127		1A
bit0	VOICE ASSIGN	0:OFF, 1:ON		1B
bit1	SINGLE TRIGGER	0:OFF, 1:ON		1C
45	bit2	RECEIVE NOTE ON	0:DIS, 1:ENA	1D
bit3	RECEIVE NOTE OFF	0:DIS, 1:ENA		1E
46	VEL SAMPLE SW	01~~7F : 01~~127	For DRUMSAMPLE SELECT by Vel	1F
47	(RESERVED)			----
KEY=C#-1~~G9 PARAMETERS				
48				00
:	Same as KEY=C-1 (16~~47)			:
4111	(127 * 32 = 4064 Bytes)			1F

[TABLE 8] 1 ARPEGGIO PATTERN PARAMETERS

1999.05.11

No. : No. in the ARPEGGIO PATTERN DUMP DATA.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00	ARP. NAME (Head)			
:	:	20~~7F		----
15	ARP. NAME (Tail)			
b0~~1	OCTAVE MOTION	0:Up, 1:Down, 2:Both, 3:Parallel		01
b2~~3	TYPE	0:As Played,1:As Played(Fill),2:Running Up,3:Up&Down		00
16	bit4	TONE MODE	0:Normal, 1:Fixed Note	03
bit5	FIXED NOTE MODE	0:As Played, 1:All Tones		04
17	LENGTH	01~~30 : 1~~48		02
18	(RESERVED)			----
19	(RESERVED)			----
20	TONE 00 NOTE NO	00~~7F : C-1~~G9		05
21	TONE 01~~11 NOTE NO			05

:	Same as TONE 00 NOTE NO			:
31	(11 Bytes)			05

STEP 01 PARAMETERS				

32	PITCH OFFSET	D0~~30 : -48~~48		06

33	GATE	0:Off, 01~~64 : 1~~100[%], 65:Legato		07

34	VELOCITY	01~~7F : 1~~127, 80:Key		08

35	FLAM	9D~~63 : -99~~99		09

36	b0~~3 TONE8~~11	0:DIS, 1:ENA		0A

37	b0~~7 TONE0~~7	0:DIS, 1:ENA		15

STEP 02~~48 PARAMETERS				

38				06
:	Same as STEP 01 (32~~37)			:
319	(6 * 47 = 282 Bytes)			15

----	ARPEGGIATOR SELECT	0:A, 1:B	It's not dump data.	16

[TABLE 9] Arpeggiator Parameter No. at GLOBAL

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
PATTERN NO.	00~~1FF : 0~~511		68,00
RESOLUTION	0:16T, 1:16, 2:8T, 3:8, 4:4T, 5:4		68,01
OCTAVE	00~~03 : 1~~4		68,02
SORT	0:OFF, 1:ON		68,06
LATCH	0:OFF, 1:ON		68,07
KEY SYNC.	0:OFF, 1:ON		68,08
KEYBOARD	0:OFF, 1:ON		68,09

[TABLE 10] SEQUENCE DATA PARAMETERS 1999.05.12

00	EVENT DATA START ADRESS(MSB)	
:	: (4 Bytes)	
03	EVENT DATA START ADRESS(LSB)	
04	EVENT DATA FREE AREA START ADRESS(MSB)	
:	: (4 Bytes)	
07	EVENT DATA FREE AREA START ADRESS(LSB)	
08	SONG 00 EVENT DATA ADRESS(MSB)	
:	: (4 Bytes)	
11	SONG 00 EVENT DATA ADRESS(LSB)	
12	SONG 001~~199, EVENT DATA ADRESS	
:	Same as SONG 00 EVENT (08~~11)	
807	(4 * 199 = 796 Bytes)	
808	CURRENT SONG NO.	00~~C7 : 00~~199
809	CURRENT PAT NO.	00~~95 : 00~~149
810	CURRENT FX SONG NO.	00~~C7 : 00~~199

811	VALID SONG	00~~C8 : 00~~200
812	VALID SONG NO.	
:		00~~C7 : 00~~199
1011	(200 Bytes)	

[TABLE 11] 1 CUE LIST DATA 1999.05.13

CUE LIST		
00	CUE LIST NAME (Head)	
:	:	20~~7F
15	CUE LIST NAME (Tail)	
16	TEMPO	28~~F0 : 40~~240
17	TEMPO MODE	0:AUTO, 1:MANUAL
18	(RESERVED)	
19	(RESERVED)	
STEP 01		
20	SONG NO.	0~~C7 : S000~~S199 FE : Continue to step01 FF : End
b0~~6	REPEAT	00~~3F:1~~64, 7F:FS
21	bit7	Load FX 0:OFF, 1:ON
STEP 02~~100		
22		
:	Same as STEP 01 (20~~21)	
219	(2 * 99 = 198 Bytes)	

[TABLE 12] 1 SONG SEQUENCE DATA 2002.02.19

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00	SONG NAME (Head)			
:	:	20~~7F		----
15	SONG NAME (Tail)			
INSERT EFFECT PARAMETERS				
16				36,00
:	FX1~~5 (24Bytes * 5)			:
135	(120 Bytes)			3B,??
MASTER EFFECT PARAMETERS				
136				3C,00
:	FX1~~2 (20Bytes * 2)			:
:	Same as COMBI.MASTER EFFECT (136~~191)			:
191	(56 Bytes)			3F,??
ARPEGGIATOR PARAMETERS				
192				33,00
:	Same as COMBI.ARPEGGIATOR (192~~213)			:
213	(22 Bytes)			35,0D
COMMON PARAMETERS				

+-----+-----+-----+-----+-----+				
	b0~~3	(RESERVED)		----
214	b4~~7	MOSS BUS SELECT	00~~07 : TIMBRE1~~8	00,0E
+-----+-----+-----+-----+-----+				
215		SCALE TYPE	00~~1A : **1-1	00,00
+-----+-----+-----+-----+-----+				
216		SCALE KEY	00~~0B : C~~B	00,01
+-----+-----+-----+-----+-----+				
217		RANDOM INTENSITY	00~~07 : 0~~7 Normal = 0	00,02
+-----+-----+-----+-----+-----+				
	b0~~5	SW 1 ASSIGN TYPE	00~~0C : **1-2	00,03
+-----+-----+-----+-----+-----+				
218	bit6	SW1 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary	00,07
+-----+-----+-----+-----+-----+				
	bit7	SW 1 ON/OFF	0:OFF, 1:ON	00,05
+-----+-----+-----+-----+-----+				
	b0~~5	SW 2 ASSIGN TYPE	00~~0C : **1-2	00,04
+-----+-----+-----+-----+-----+				
219	bit6	SW2 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary	00,08
+-----+-----+-----+-----+-----+				
	bit7	SW 2 ON/OFF	0:OFF, 1:ON	00,06
+-----+-----+-----+-----+-----+				
	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3	00,09
220	bit7	REALTIME CONTROLS	0:A, 1:B	00,0D
+-----+-----+-----+-----+-----+				
221		KNOB 2 ASSIGN TYPE	00~~7C : **1-3	00,0A
+-----+-----+-----+-----+-----+				
222		KNOB 3 ASSIGN TYPE	00~~7C : **1-3	00,0B
+-----+-----+-----+-----+-----+				
223		KNOB 4 ASSIGN TYPE	00~~7C : **1-3	00,0C
+-----+-----+-----+-----+-----+				
TRACK 1~~16 PARAMETERS				
+-----+-----+-----+-----+-----+				
224				n,00
:		Same as TIMBRE 1 (224~~251)		:
671		(28 * 16 = 448 Bytes)		n,30
+-----+-----+-----+-----+-----+				
SONG CONTROL DATA				
+-----+-----+-----+-----+-----+				
672		RPPR ON/OFF	0:OFF, 1:ON	----
+-----+-----+-----+-----+-----+				
673		TRACK SELECT	0~~F,10 : TRK01~~16	----
+-----+-----+-----+-----+-----+				
674		(RESERVED)		----
+-----+-----+-----+-----+-----+				
675		(RESERVED)		----
+-----+-----+-----+-----+-----+				
676		METER	10~~3F **12-1	----
+-----+-----+-----+-----+-----+				
677		TEMPO	28~~F0 : 40~~240	----
+-----+-----+-----+-----+-----+				
678		METRONOME LEVEL	00~~7F : 00~~127	----
+-----+-----+-----+-----+-----+				
679		METRONOME BUS SELECT	0:L/R,1:L,2:R,3~~6:1~~4, 7:1/2,8:3/4	----
+-----+-----+-----+-----+-----+				
680		METRONOME PRECOUNT	00~~02 : 0~~2	----
+-----+-----+-----+-----+-----+				
681		TEMPO MODE	0:AUTO, 1:MANUAL	----
+-----+-----+-----+-----+-----+				
682		TRACK1~~8 MODE	0:PLAY, 1:MUTE	----
+-----+-----+-----+-----+-----+				
683		TRACK9~~16 MODE	0:PLAY, 1:MUTE	----
+-----+-----+-----+-----+-----+				
684		TRACK 1 NAME (Head)	20~~7F	
:		:		----
699		TRACK 1 NAME (Tail)		

700	TRACK 2~~16 NAME			
:	Same as TRACK 1 NAME (684~~699)			----
939	(16 * 15 = 240 Bytes)			
940	TR1 EVENT ADRS (MSB)			
:	: (4 Bytes)			----
943	TR1 EVENT ADRS (LSB)			
944	TRACK 2~~16, MASTER TRACK EVENT ADDRESS			
:	Same as TRACK 1 EVENT (940~~943)			----
1007	(4 * 16 = 64 Bytes)			
1008	(RESERVED)			
:	: (4 Bytes)			----
1011	:			
PATTERN 0				
1012	NAME (Head)			
:	:	20~~7F		----
:	:	[ASCII CODE]		
1027	NAME (Tail)			
1028	LENGTH	01~~63 : 00~~99		----
1029	METER	**12-1		----
1030	(RESERVED)			----
1031	(RESERVED)			----
1032	EVENT DATA ADRS(MSB)			
:	: (4 Bytes)			----
1035	EVENT DATA ADRS(LSB)			
1036	PATTERN 1~~99			
:	Same as PATTERN 0 (1012~~1035)			----
3411	(24 * 99 = 2376 Bytes)			
3412	TRACK9~~16 INT	0:OFF, 1:ON		----
3413	TRACK1~~8 INT	0:OFF, 1:ON		----
3414	TRACK9~~16 EXT	0:OFF, 1:ON		----
3415	TRACK1~~8 EXT	0:OFF, 1:ON		----
TRACK 1 PLAY LOOP				
bit7	ASSIGN	0:OFF, 1:ON		----
3416 bit6	PLAY INTRO	0:OFF, 1:ON		
b0~~5	START MEASURE (MSB)			
		01~~3E7 : 001~~999		----
3417	START MEASURE (LSB)			
3418	END MEASURE (MSB)			
		01~~3E7 : 001~~999		----
3419	END MEASURE (LSB)			
3420	TRACK 2~~16			
:	Same as TRACK 1 PLAY LOOP (3416~~3419)			----
3479	(4 * 15 = 60 Bytes)			
KEY=C-1 RPPR				

3480	PATTERN	00~~63 : U00~~U99 00~~95 : P00~~P149	----
b0~~3	TRACK	00~~0F : 01~~16	----
3481	b4~~7	0:Off, 1:Beat, 2:Measure, 3:SEQ	----
b0~~3	MODE	0:Once, 1:Manual, 2:Endless	----
3482	b4~~7	0:NOTE,1:PAT,2:SHUTDOWN	----
3483	SHIFT NOTE	F4~~0C : -12~~12	----
3484	KEY=C#-1~~G9 RPPR		----
:	Same as KEY=C-1 RPPR (3480~~3483)		----
3991	(4 * 127 = 508 Bytes)		----

**12-1 : 10~~1F : 1/4~~ 16/4
 20~~2F : 1/8~~ 16/8
 30~~3F : 1/16~~16/16

SONG SEQUENCE EVENT DATA FORMAT

* SONG SEQUENCE EVENT DATA's address is showed by each track's EVENT ADDRESS (1 SONG SEQUENCE DATA's 940~~1007th,1032~~3411th). And usually they are located just behind the 1 SONG SEQUENCE DATA.

x : Ignored

1st Data	2nd Data	3rd Data	4th Data	5th Data	6th Data
.... kkkk

kkkk : Evetn Data Kind

= 1 : Bar at Master Track
 = 3 : Track End
 = B : Tempo Change

= 1 : Bar at Track 1~~16
 = 2 : Pattern
 = 3 : Track End
 = 9 : Note
 = A : Poly Key Pressure
 = B : Control Change
 = C : Program Change
 = D : After Touch
 = E : Pitch Bend

= 1 : Bar at Pattern
 = 3 : Pattern End
 = 9 : Note
 = A : Poly Key Pressure
 = B : Control Change
 = C : Program Change
 = D : After Touch
 = E : Pitch Bend

* NOTE ON/OFF

xxxx	gggg	gggg	gggg	xvvv	vvvv	xkkk	kkkk	tttt	tttt	tttt	1001
------	------	------	------	------	------	------	------	------	------	------	------

Length Velocity Key No. Tick

ggg : Note length (From Note On to Note Off)
 = 000~~BFFH
 (= 0C0H : Quarter note)
 (= FFFH : Tie to next measure)

vv = 01~~7fH

ttt : Location of Note On (in the measure)
 = 000~~BFFH
 (= 0C0H : Quarter note)
 (= FFFH : Tie from last measure)

* PITCH BEND

uppp pppp	xbbb bbbb	xPPP PPPP	xBBB BBBB	tttt tttt	tttt 1110
Last Val(H)	Last Val(L)	Value(H)	Value(L)	Tick	
*1				*2	

* AFTER TOUCH

xxxx xxxx	xxxx xxu	xvvv vvuv	xVVV VVVV	tttt tttt	tttt 1101
		Last Value	Value	Tick	
	*1			*2	

* PROGRAM CHANGE

bbbb bbbb	unnn nnnn	BBBB BBBB	xNNN NNNN	tttt tttt	tttt 1100
Last Bank	Last Prog. No.	Bank	Prog. No.	Tick	
	*1			*2	

* CONTROL CHANGE

xxxx xxu	xvvv vvuv	xVVV VVVV	xnnn nnnn	tttt tttt	tttt 1011
	Last Value	Value	Control No.	Tick	
*1				*2	

* POLY KEY PRESSURE

xxxx xxxx	xxxx xxxx	xvvv vvuv	xkkk kkkk	tttt tttt	tttt 1010
		Value	Key No.	Tick	
				*2	

* PATTERN (Insterad of BAR)

xxxx xxxx	xxxx xxxx	xMMM MMMM	nnnn nnnn	xxnm mmmm	mmmm 0010
		Pat Measure	Pat No.	Measure No.	
				*3	

M : Measure No. in the Pattern (00~~63H : 00~~99)
 n = Pattern No. (00~~63 : U00~~U99
 64~~F9 : P000~~P149)

* TEMPO CHANGE

xxxx xxXu	vvvv vvvv	VVVV VVVV	0110 1011	tttt tttt	tttt 1011
Last Tempo		Tempo	(Fixed)	Tick	
*1				*2	

vv,VV = 28H~~F0H (40~~240BPM)

* BAR

xxxx xxxx	xxbb bbbb	ssss ssss	ssss ssss	xxmm mmmm	mmmm 0001
Meter		Size		Measure No.	
				*3	

bb = 10~~1F : 1/4~~16/4

20~~2F : 1/8~~16/8

30~~3F : 1/16~~16/16

ss : Event Number in the measure

* TRACK/PATTERN END

xxxx xxxx	xxxx xxxx	xxxx xxxx	xxxx xxxx	xxmm mmmm	mmmm 0011
					Measure No.
					*3

*1 : u = 0 : Use [Last value] for last value

u = 1 : Last value is unfixed

Last value is used when Rewind & Location is decreased.

*2 : ttt : Location of Event (in the measure)

= 000~~BFFH

(= 0C0H : Quarter note)

*3 : mmm : Measure No. in the Track (000~~3E7H = 000~~999)

-Revision History-

Rev	Date	By	Description
1.0	Jan.24.'02	Higuchi	Initial Release.
1.1	Jan.24.'02	Izumi	Corrected the comment of "(13) CURRENT PROGRAM PARAMETER DUMP".
1.2	Jan.25.'02	Mukai	Change "COMMON PARAMETERS"(Table 12) size.
1.3	Jan.29.'02	Mukai	Change "GLOBAL PARAMETERS"(Table 4).
1.4	Jan.30.'02	Higuchi	Change "ARPEGGIATOR PATTERN No."(Table1,3,5,6,9).
1.5	Feb.19.'02	Higuchi	ADD "PARA No." in "1 SONG SEQUENCE DATA"(Table 12).
1.6	Feb.20.'02	Higuchi	Modified that it is Parameter,Message,and so on in detail.
1.7	Mar.07.'02	Toshiya	Fix some mistakes. Add the explanation of the order of Drum kit (**1-9).
1.8	Jun.17.'02	Mukai	Fix some mistakes.
1.9	Aug.01.'02	Mukai	Fix some mistakes.